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ABSTRACT

The purpose of this study was to identify the characteristics of minority students who take the General Knowledge Test of the National Teachers Examination (NTE) Core Battery. Low minority pass rates on these tests demonstrate the need for interventions to increase the supply of minority teachers. Data were analyzed to determine candidates': (1) demographic, socioeconomic, and educational background; (2) education experience in college and graduate school; (3) experiences in teacher education programs; (4) career plans and teaching aspirations; (5) and reasons for taking the test. The question of whether successful and unsuccessful NTE candidates differ significantly on these background and educational characteristics was also studied. Findings suggest that strong academic preparation and support are essential to the development of academic talent, and that increasing the pool of minority teachers translates to increasing the quality of elementary and secondary education. Also included in this report are policy implications, references, tables, figures, and three appendixes: figures and a discussion concerning the representativeness of survey respondents; the study questionnaire; and a coding of variables for regression analysis. (LL)

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Teacher Programs Council Research Report Series

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CHARACTERISTICS OF MINORITY NTE TEST-TAKERS

Richard J. Coley
Margaret E. Goertz

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No. 91-1

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CHARACTERISTICS OF MINORITY NTE TEST-TAKERS

Richard J. Coley
Margaret E. Goertz

Teacher Programs Council Report No. 91-1
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Teacher Programs Council

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Executive Summary

The United States faces a teacher shortage as it enters the twenty-first century. Declining numbers of minority teachers can be attributed to the limited number of minority students entering and completing college, declining interest in education careers, and the teacher testing movement. As the decade closed, most states required prospective teachers to pass a test. Low minority pass rates on these tests combined with the large proportion of minority teachers who expect to leave teaching or retire within a few years demonstrate the need for interventions to increase the supply of minority teachers. Yet we know little about the characteristics of minority students who meet state certification requirements that might inform these intervention efforts. This study was designed to identify the characteristics of minority students who take the General Knowledge Test of the NTE Core Battery, a test required for prospective teachers in 22 states. It has two purposes: First, and for the first time, the study collected information on candidates' demographic, socioeconomic, and educational background; education experience in college and graduate school; experiences in teacher education programs; career plans and teaching aspirations; and reason(s) for taking the test. Second, data are analyzed to determine whether successful and unsuccessful NTE candidates differ significantly on these background and educational characteristics.

Background Information

Most of the candidates were females. While ages ranged from 18 to 64, the mean age was about 30. Nearly two-thirds are the first generation in their family to attend college and almost half had at least one parent who did

not finish high school; the majority of parents held non-professional employment. Nearly a quarter reported that one of their parents had been in the teaching profession, mostly as teachers. About half of the candidates attended an urban high school; few came from suburban schools. Of the two-thirds that reported their high school class rank, most were in the top half. While most of the candidates reported that they communicate better, or as well, in English, than in another language, a large proportion of Hispanic respondents indicated that they were fluent in another language.

At the time of the testing, few candidates were less than seniors in college and about a third were enrolled in graduate school or held an advanced degree. Half of the Black and more than a third of the Hispanic candidates were education majors in college. Nearly half of the candidates had a "mostly B" average in college and nearly half reported receiving academic honors as undergraduates. A large percentage, however, reported taking courses or special programs to improve their reading, writing, mathematics, or study skills. While a large proportion of the candidates borrowed money to attend college, few reported that they received financial aid that was intended to attract students to teacher education programs.

Two-thirds of the Black and more than half of the Hispanic candidates were enrolled in teacher education programs as undergraduates (but not necessarily as education majors), more than half in elementary education. Nearly a quarter of the Hispanic candidates majored in bilingual education. Nearly all who were enrolled in teacher education programs indicated that there were requirements for admission to these programs. Three-quarters were required to have minimum GPAs. Other requirements included passing a test, interviews, and faculty recommendations.

A third of the Black and nearly half of the Hispanic candidates reported that they had attended or were currently enrolled in a graduate program, most either majoring or minoring in education. Most candidates reported a graduate GPA of "B" or better. About a third of the candidates had participated in graduate teacher education programs, with elementary education the predominant choice of major. Two-fifths of the Hispanic graduate candidates specialized in bilingual education.

Most of the respondents in the survey participated in a practicum or student teaching assignment and most did so in urban school districts.

A majority of the candidates plan to make teaching their career. While a third of the candidates expressed no preference about where they would like to teach, more than a third would prefer an urban school district. More than half seek certification in elementary education and almost half of the Hispanic candidates plan to become certified in bilingual education.

About three-quarters of the candidates reported that they took the General Knowledge Test to meet initial state certification requirements. Candidates also took the test for admission to, and graduation from, their teacher education program. Less than a third of the candidates reported attending special classes or programs to help them prepare for the NTE.

Characteristics of Successful and Unsuccessful Candidates

The study separated candidates into two groups based on NTE General Knowledge score and compared the groups on each survey question. Successful candidates are defined as those who scored at least 649. These candidates would meet the NTE certification requirements of all but one state, which uses a relatively high cut-score only for candidates from out-of-state

institutions. Unsuccessful candidates are defined as those scoring below 639. These candidates would not meet NTE certification requirements in any state except one. Only statistically significant differences are reported.

High and low scorers differed on five socio-demographic characteristics -- gender, fluency in languages other than English, parent education level, parent occupation, and high school rank. High scoring Black candidates were more likely to come from families with higher socioeconomic status than low scorers, and to have been in the top quarter of their high school graduating classes. Hispanic high scorers were more likely not to be fluent in languages other than English, to have parents with higher education levels, mothers who were more likely to work and to work in skilled or professional occupations, and higher high school class rank. Both Black and Hispanic male test-takers were more likely to be high scorers than their female counterparts.

High and low scorers also differed in their educational backgrounds. High scorers tended to have more education and advanced degrees, higher grade point averages, and to have undergraduate majors or minors other than education. Among candidates who were in undergraduate education programs, secondary education majors scored higher than early childhood education majors. At the graduate level, high scoring Black test-takers were somewhat more likely to be enrolled in a teacher education program than low scorers.

Differences were also observed between high and low scorers in their career plans. High scorers were less likely than low scorers to plan on making teaching their career, but were more interested in teaching in low income urban or suburban communities. Finally, high scorers were more likely to seek certification in secondary education than low scorers.

Conclusion and Policy Implications

Successful candidates reported doing better in school than unsuccessful candidates, having parents with higher levels of education and employment, more advanced degrees, and college majors other than education. These results are neither surprising nor novel. They mirror the findings of many other studies that document the relationship between social and economic advantage and achievement. The shortage of minority teachers is a pervasive social problem. The disparity between t e proportion of students from minority and majority groups who can meet teacher certification requirements is directly linked to our society's social and educational structures. This study, like most others, suggests that strong academic preparation and support are essential to the development of academic talent, especially among students from minority groups. Increasing the pool of minority teachers who can meet state certification requirements means increasing the quality of their elementary and secondary educations.

Four implications of these findings are particularly noteworthy. First, prospective minority teachers are often the first generation in their families to attend college. They come from families with limited financial resources and they enter college with less academic preparation then their White peers. Colleges and universities must develop support programs that are geared to the academic and financial needs of these students. Second, low socioeconomic status students who succeed in college pass the Test of General Knowledge. Colleges and universities can, and do, make the difference for disadvantaged students. Third, the data show that prospective minority teachers take varied routes to a teaching career. Recruitment and training policies should reflect the large number of minority individuals who choose teaching as a second career, but possibly not their last career. Finally, only half of the

successful minority candidates in this study plan to make teaching their career. To retain talented individuals of all races in the classroom, changes must be made in the structure of the teaching profession and in improving the professional environment of teaching.

Introduction

The United States faces a teacher shortage as it enters the twenty-first century. In the last few years, spot shortages have been reported in teaching areas such as mathematics, physical science, foreign languages, special education and bilingual education, and in inner-city and rural school districts. By 1995, the nation will need to fill over one million teaching positions (Haggstrom, Darling-Hammond and Grissmer, 1988). The shortage of Black and Hispanic teachers will be particularly acute. Representation of Black teachers in the teaching profession declined from nearly 10 percent of all teachers in 1980 to seven percent in 1986 (NEA, 1980; 1987). Projections indicate that by the year 2000, Black teachers may comprise as little as five percent of the teacher pool (Goertz and Pitcher, 1985).

The declining representation of minority teachers, particularly Black teachers, has been attributed to several factors--a limited number of minority students entering and completing college, a declining interest in education careers and the teacher testing movement.

Black and Hispanic students are less likely to complete high school, attend college and obtain a baccalaureate degree than White or other minority students. While Blacks constituted 17 percent of elementary and secondary school enrollments in 1986, they represented only nine percent of the college students and were awarded only six percent of the nation's bachelor's degrees. Ten percent of the nation's elementary and secondary school students are Hispanic, but in 1986 only five percent of the nation's undergraduates were Hispanic and Hispanic students received less than three percent of the baccalaureate degrees awarded that year (NCES, 1989).

Black college enrollments fell two and one-half percent between 1980 and 1986, from 1.107 million to 1.080 million students (NCES, 1989). Preliminary figures released by the U. S. Department of Education show a reversal in this trend, however. Between 1986 and 1988, Black college enrollments rose nearly five percent--from 1.080 million to 1.13 million students (New York Times, 1990). Between 1980 and 1986, Hispanic enrollments grew 30 percent, with the increase spread equally across two- and four-year institutions (NCES, 1989).

As opportunities in other professions expanded in the 1970s and 1980s, minority college students, especially Blacks, chose non-teaching careers. Highly qualified minorities are in extraordinary demand by business, academia, and the professions at a time when the status of the teaching profession is relatively low. In 1977, 22 percent of the bachelor's degrees conferred on Black students and 16 percent of the degrees awarded to Hispanic students were in education. By 1987, these percentages had dropped to eight percent for both groups. As a result, the Black and Hispanic share of bachelor's degrees in education decreased from 11 percent to eight percent. The total number of bachelor degrees in education awarded to Black and Hispanic students fell from nearly 16,000 in 1977 to 6,500 ten years later, while the number of degrees in natural and computer sciences, engineering, business and other technical/professional fields grew from 33,000 to over 53,000 (NCES, 1990).

The imposition of testing requirements for entrance into the teaching profession is also having a disproportionate effect on the supply of minority teachers. In 1989-90, 39 states required aspiring teachers to pass a state-prescribed, standardized test before entering a teacher education program and/or before being certified to teach (Coley and Goertz, 1990). Regardless of the type of test used or the area assessed, minority candidates have substantially lower pass rates than do majority candidates (c.f., DeMauro, 1989; Smith, 1988; Gifford, 1987; Goertz and Pitcher, 1985; and Goertz,

Ekstrom and Coley, 1984). Using data from the 1987-88 NTE Programs Core Battery tests, Goertz and DeMauro (1989) found that at the median state qualifying score for the Test of Communications Skills, 90 percent of the White examinees would qualify, compared to 47 percent of Black and 61 percent of Hispanic test-takers. One finds similar patterns for the Test of General Knowledge and Test of Professional Knowledge.

A potentially high rate of attrition among minorities who are currently in the teaching profession will also have a negative effect on the supply of minority teachers. In 1988, 41 percent of Black and Hispanic teachers polled in a national survey reported they will probably leave teaching in the next five years, compared to 25 percent of the White teachers surveyed. Of this group of minority teachers who plan to leave teaching, more than 20 percent are very satisfied with their careers and 55 percent have less than five years of teaching experience (Metropolitan Life, 1988). More than one-third of the Black teachers in the South have 25 or more years of experience and are rapidly approaching retirement (Southern Education Fund, 1990).

Many researchers and educational groups have recommended strategies to increase the flow of Black talent into the teaching profession (c.f., AACTE, 1987; Baratz, 1986; Witty, 1989; Witty, 1983). These include programs to develop the academic skills of minority secondary school students; programs in colleges and universities to educate promising disadvantaged students; financial incentives for minority students who enter and complete teacher education programs; and support programs for reentry and career change.

While the need for interventions to increase the supply of minority teachers is apparent, the desired focus of such intervention efforts remains unclear. We know little about the characteristics of minority teaching candidates who meet state certification requirements. This study was designed to identify these characteristics for minority students who take the NTE Core

Battery, a test required for admission into teacher education programs and/or for teacher certification in 22 states. It specifically addressed three questions:

- What are the background and educational characteristics of minority NTE test takers?
- What are the background and educational differences between successful and unsuccessful candidates?
- What are their career plans with regard to teaching?

To answer these questions, we surveyed Black and Hispanic prospective teachers who took the General Knowledge Test of the NTE Core Battery in October 1988.[1] The first section of this paper describes the study's methodology and response rates. The second section presents information on respondents' backgrounds, educational experience, career plans and teaching aspirations, and reasons for taking the General Knowledge Test. The third section identifies differences between "successful" and "unsuccessful" test-takers. The final section discusses the policy implications of these findings.

Composition of the Sample and Response Rates

The survey was mailed to 4,004 individuals who identified their race/ethnicity as Black, Mexican American, Puerto Rican, Hispanic, or who omitted a race/ethnicity response, and sat for the NTE General Knowledge test in October 1988. After a reminder post card and a second mailing to non-respondents, questionnaires were received from 2,464 individuals, yielding a response rate of 61 percent. After matching questionnaire identification

[1]The NTE Core Battery consists of three tests -- General Knowledge, Professional Knowledge, and Communications Skills. The General Knowledge test is used in 22 states as part of teacher certification requirements and is the only testing requirement in some large states.

numbers with NTE registration files and race/ethnicity criteria, 1,984 records were available for analysis (1,391 Black and 593 Hispanic).

Since the percentage of those who do not respond to a survey and the extent to which these non-respondents are different from the respondents will affect survey estimates, we compared respondents and non-respondents on three characteristics -- General Knowledge Test score, age, and race/ethnicity. This analysis is presented in Appendix A and indicates that the non-respondents were not substantially different from the respondents. Thus, we believe the results are representative.

Characteristics of Survey Respondents

The individuals who received the ETS survey were asked to answer questions about their demographic, socioeconomic and educational background; their educational experiences in college and, if relevant, graduate school; their experiences in teacher education programs; their career plans and teaching aspirations; and the reason(s) they took the General Knowledge Test. The remainder of this paper reports the responses of the Black and Hispanic test-takers to these questions along with their General Knowledge Test score distributions.

Background Characteristics

The respondents are largely female -- 85 percent of the Black and 79 percent of the Hispanic respondents (Figure 1). The average ages of the Black and Hispanic respondents were 30 and 31, respectively, and their ages ranged from 18 to 64. While the modal age for Blacks was 22, only 20 percent of this group was 22 years old or younger. The modal age for Hispanics was 25 and a slightly larger percent of this group was over 40 years of age (14 percent) than 22 years or under (12 percent). (Figure 2).

Nearly two-thirds of the respondents are the first generation in their family to attend college and about 45 percent had at least one parent who did not complete high school. Forty-four percent of the Black and 46 percent of the Hispanic respondents reported that their father did not complete high school. Another 32 percent of the Blacks and 26 percent of the Hispanics said their fathers received a high school diploma and/or attended a business or trade school. Fewer than 20 percent of the fathers of the minority respondents held a bachelor's or graduate degree (13 percent of Blacks and 18 percent of Hispanics) (Figure 3). The average educational level of the respondents' mothers was about the same as the average educational level of their fathers, except that Black mothers were somewhat more likely to have attended college and/or graduate school than Black fathers. (Figure 4.)

Nearly one-half of the fathers of Black respondents and one-third of the fathers of Hispanic respondents were laborers or semi-skilled workers. Another 28 percent of the Black and 41 percent of the Hispanic fathers were reported to have skilled, managerial or self-employed occupations. Fewer than 20 percent of the fathers in either group were in the professions. (Figure 5).

The mothers of Hispanic respondents were considerably more likely to be homemakers than the mothers of the Black respondents (41 percent versus 25 percent). Another 40 percent of the Black and 33 percent of the Hispanic mothers were in unskilled, semi-skilled or clerical/sales occupations. Twenty-five percent of the Black and 13 percent of the Hispanic mothers had professional occupations. (Figure 6).

Twenty-five percent of the Black and 20 percent of the Hispanic respondents reported their mother and/or father had been in the teaching profession. Of the fathers who were in education, about half had been teachers, one-third had been elementary/secondary school administrators or counselors and 30 to 40 percent had been college teachers or administrators.

(Figure 7). The mothers were more likely to have been teachers (63 percent of the Black mothers in education and 54 percent of the Hispanic mothers in education) and/or aides (28 percent of the Blacks and 42 percent of the Hispanics) than administrators or college teachers (22 and 28 percent, respectively). (Figure 8.)

About one-half of the respondents attended high school in an urban area: 33 percent of the Blacks and 38 percent of the Hispanics in a middle or upper income urban location and 15 percent of the Blacks and 19 percent of the Hispanics in a low income urban neighborhood (Figure 9). Another 41 percent of the Black and 29 percent of the Hispanic respondents attended high school in a rural community or small town. Few respondents came from suburban high schools. About one-third of the respondents did not report their high school class rank (Figure 10). Another one-third of both racial/ethnic groups recalled that they were in the top quarter of their high school class, while fewer than 15 percent reported being in the bottom half of their class.

Nearly all of the Black and 87 percent of the Hispanic respondents reported they communicate better or as well in English than in any other language. Eleven percent of the Blacks and 81 percent of the Hispanics said they were fluent in other languages.

More than one-half of the respondents were college seniors or had only a bachelor's degree at the time they took the General Knowledge test (59 percent of the Blacks and 55 percent of the Hispanics). (See Figure 11). Another 28 percent of the Black respondents and 39 percent of the Hispanic respondents were enrolled in graduate school or held a master's degree or doctorate. Only 12 percent of the Black and 4 percent of the Hispanic students were in their freshman through junior years of college.

Forty-eight percent of respondents in both racial/ethnic groups reported they had another career or occupation before becoming interested in a career

in education or teaching. About 40 percent of these individuals had worked most recently in a professional occupation and another one-third had a clerical or sales position.

Undergraduate Preparation

One-half of the Black respondents majored in education in college (Figure 12). The next most frequently cited majors were business/accounting and physical education, with 6 to 7 percent of the respondents in each category. Hispanic students were less likely to major in education (36 percent of the respondents) and more likely to major in foreign language (12 percent) and psychology (8 percent). About two-thirds of the respondents reported an undergraduate minor. Of these, 17 percent of the Blacks and 25 percent of the Hispanics had a minor in education and another 11 percent of the Hispanic students had a minor in foreign language. The other minors were scattered across the academic disciplines. (Figure 13).

Respondents were asked to report their overall undergraduate grade point average (GPA). As shown in Figure 14, nearly one-half of the respondents answered "Mostly B." Twenty-one percent of the Black and 35 percent of the Hispanic respondents reported a B+ or better GPA, while 37 percent of the Blacks and 18 percent of the Hispanics had average grades of "C" or "C+".

Forty-five percent of respondents in both racial/ethnic groups said they had received academic honors as an undergraduate, (e.g., dean's list, Phi Beta Kappa, cum laude, honor society) while 45 percent of the Black and 36 percent of the Hispanic respondents reported taking courses or participating in support services or special programs to improve their reading, writing, mathematics or study skills.

Two-thirds of the Black and 57 percent of the Hispanic respondents borrowed money to attend undergraduate school. About 40 percent of those who

borrowed money owed $5,000 or more at the end of college (Figure 15). Another 30 percent owed between $2,500 and $5,000 and the remainder had debts of less than $2,500. Only 13 percent of the Black and 16 percent of the Hispanic respondents reported they received financial aid that was intended specifically to attract students to teacher education. Another five percent said they were not sure if they had this kind of assistance. About two-thirds of those who answered "Yes" or "Not Sure" described this special financial aid as a grant, scholarship, or loan that is forgiven or reduced for teaching. (Figure 16).

Graduate Preparation

One-third of the Black respondents and 44 percent of the Hispanic respondents reported they had attended or were currently enrolled in a graduate program. Nearly three-quarters of the Black and two-thirds of the Hispanic graduate students majored in education (Figure 17). Thirteen percent of the Blacks and 23 percent of the Hispanics reported majoring in the humanities and social sciences. Only five percent majored in the sciences. Eleven percent of the Blacks and 17 percent of the Hispanics reported a graduate minor. About 40 percent of these had a minor in education (Figure 18). Thirty-five percent of the Black and 43 percent of the Hispanic respondents had a minor in the social sciences or humanities. Fewer than 10 percent had a minor in the sciences.

The most commonly cited graduate GPA was a "B+," with 41 percent of the Black and 38 percent of the Hispanic students reporting this average (Figure 19). Eighteen percent of the Blacks and 27 percent of the Hispanics had an average GPA of "A," while 30 percent of the respondents had a "B" average.

Teacher Education Programs

Two-thirds of the Black and 56 percent of the Hispanic respondents had participated in undergraduate teacher education programs. More than half of these respondents (51 percent of the Black and 59 percent of the Hispanic) concentrated or majored in elementary education (Figure 20). Thirty percent specialized in secondary education. Nearly one-quarter of the Hispanic respondents had an undergraduate education specialization in bilingual education. Three-quarters of the respondents reported that their undergraduate teacher education programs required a minimum grade point average for admission (Figure 21). Nearly 30 percent cited passing a basic skills test and 20 percent cited passing another type of test (e.g., college admissions test, PPST) as criteria for entering their teacher education programs. Only ten percent of the respondents said there were no admissions requirements for their programs.

Twenty-nine percent of the Black and 44 percent of the Hispanic respondents participated in a graduate teacher education program. Slightly less than half of these individuals were in an elementary education program (Figure 22). Forty-one percent of the Hispanic respondents specialized in bilingual education.

Sixty-three percent of the Black and 73 percent of the Hispanic respondents participated in a practicum or a student teaching assignment. Nearly 40 percent of the Blacks and one-half of the Hispanics with this experience said their practicum or student teaching took place in a low income urban school (Figure 23). About 40 percent of the Blacks and one-third of the Hispanics reported student teaching in a middle or upper income urban school, but less than 15 percent were assigned to a suburban community.

Career Plans

A majority of the respondents (57 percent of the Blacks and 60 percent of the Hispanics) plan, at this point in time, to make teaching their career (Figure 24). Another 23 percent plan to teach until they can move into another position in education. One-third of the respondents have no preference about or don't know what type of school they would like to teach in (Figure 25). About 20 percent would prefer to teach in a low income urban area and 17 percent in a middle or upper income urban school. Fewer than five percent would like to work in a rural community. These preferences appear to reflect the kinds of schools where the respondents had their practicum or student teaching experiences.

More than one-half of the minority respondents sought certification in elementary education--53 percent of the Blacks and 61 percent of the Hispanic (Figure 26). Nearly 30 percent of both groups sought secondary school certification. Forty-six percent of the Hispanic students plan to be certified in bilingual education.

Reasons for Taking the General Knowledge Test

About three-quarters of the respondents reported they took the General Knowledge test to meet initial state certification requirements. About ten percent were seeking to renew or obtain additional state certification. Twenty-four percent of the Black and 19 percent of the Hispanic respondents needed to pass the test to graduate from their teacher education program. The test was an admissions requirement for 35 percent of the Blacks and 24 percent of the Hispanics. (Figure 27).

One-third of the Black and 14 percent of the Hispanic respondents reported they attended special classes or programs to help them prepare to take the NTE.

General Knowledge Score Distributions

This section of the report provides a basis for differentiating between successful and unsuccessful test-takers. Table 1 shows the General Knowledge score distributions for the Black and Hispanic respondents. These distributions, different for each population, can be used to divide the test-takers into quartiles as a basis for examining their characteristics.

Table 1

General Knowledge Score Distributions

	Black	Hispanic
Mean	642	650
(Standard Deviation)	(11.4)	(12.8)
Range	613 - 683	621-686
75th Percentile	650	660
50th Percentile	641	650
25th Percentile	635	641

A second way to group test-takers into successful and unsuccessful groups is to use actual state cut-scores and to divide the groups into high scorers and low scorers. In Table 2, high scorers are defined as those who achieve at least a 649; low scorers are defined as those who score below 639. Using this definition, high scorers meet the passing score of all states except California, which uses a cut score of 660 and requires the test only for prospective teachers from out-of-state institutions. Low scorers meet only the passing score set in North Carolina.

Table 2

Percent of Respondents Meeting High and Low Score Criteria

	Black	Hispanic
High Scorers >= 649	26.0%	50.9%
Low Scorers < 639	39.8%	17.2%

Characteristics of High and Low Scoring Test-takers

This section of the paper identifies differences in the background characteristics and educational experiences of individuals based on their NTE General Knowledge Test score. As discussed in the preceding section, test-takers were grouped two ways: (1) into quartiles using the General Knowledge Test score distributions for the Black and for the Hispanic respondents; and (2) into "successful" and "unsuccessful" test-takers using actual state cut scores. Responses for each survey question were reported for each group separately. A chi square was calculated for test-takers grouped by quartiles to determine if high and low-scoring respondents differed in their responses. Only variables with a statistically significant chi square ($p < .05$) are discussed in this section.

The results are reported by the second grouping of respondents; that is, for test-takers who achieved at least a 649 on the Test of General Knowledge (high scorers) and for those who scored below a 639 (low scorers). This approach was used because, as described in the previous section of this report, it yields a group of test-takers who are defined as successful based on states' actual teacher certification examination requirements. In addition, both groupings yield similar results.

Socio-demographic characteristics

High and low scorers differed on five socio-demographic characteristics: (1) gender, (2) fluency in a language other than English, (3) level of parent education, (4) parent occupation, and (5) high school class rank.

Gender. Both Black and Hispanic male test-takers were more likely to be high scorers than their female counterparts. While nearly 85 percent of Black test-takers were female, only 79 percent of the Black high scorers were female. Similarly, while 79 percent of the Hispanic test-takers were female, only 74 percent of the Hispanic high scorers were female (Table 3).

Fluency in another language. Among Hispanic test-takers, high scorers were less likely to report being fluent in a language other than English. While 89 percent of the low scoring Hispanic respondents were fluent in a language other than English, 76 percent of high scorers reported being fluent in another language. (Table 4).

Level of parent education. Respondents were asked to report the highest educational level completed by both their mothers and fathers. Among Black test-takers, high scorers were more likely to have mothers with some college or a college degree than low scorers. For example, mothers of 41 percent of the high scorers were reported as having at least some college education as compared to 25 percent of the low scorers. Conversely, mothers of 41 percent of the low scorers had not graduated from high school compared to 25 percent of the mothers of high scorers. A similar relationship was found for Hispanic test-takers (Table 5).

Statistically significant differences were found for both racial/ethnic groups on father education. The fathers of both Black and Hispanic high scorers were more likely to have attended college than the fathers of low

scoring respondents. Among Black test-takers, fathers of 38 percent of the high scorers were reported as having attended college compared to 18 percent of the low scorers. For Hispanics, these percentages were 35 percent and 15 percent, respectively (Table 6).

Parent Occupation. Mothers of Black high scoring test-takers were more likely to hold managerial or professional jobs and less likely to be laborers or work in skilled or clerical positions than were mothers of Black low scorers. Nearly 38 percent of the mothers of high scorers held managerial or professional jobs compared to 25 percent of the mothers of low scorers. In contrast, 31 percent of the mothers of low scorers but only 15 percent of the mothers of high scorers were laborers. Among Hispanic test-takers, significant differences were found in the percentage of mothers who were full-time homemakers, as well as in the type of job held by mothers who worked. Thirty-seven percent of the mothers of high scorers were full-time homemakers compared to 54 percent of the mothers of low scorers. Among working mothers, the mothers of high scorers were considerably more likely to hold managerial/professional or skilled/clerical positions (23 percent and 25 percent, respectively) than were the mothers of low scorers (15 percent and 13 percent, respectively) (Table 7).

Significant differences were also found in the occupations of fathers of low and high scoring Black test-takers. A similar, but weaker, relationship was found between high and low scoring Hispanic test-takers. The fathers of high scoring Black respondents were more likely to hold managerial and professional jobs and less likely to be laborers than were the fathers of low scoring Black test-takers. Nearly 36 percent of the fathers of high-scoring Black test-takers held managerial or professional jobs compared to 22 percent

of the fathers of low scoring Black test-takers. Twenty-three percent of the fathers of high-scoring Black respondents were laborers compared to 44 percent of the fathers of low scoring respondents (Table 8).

High school rank. High scoring Black and Hispanic respondents were considerably more likely to have been in the top one-quarter of their high school class than low scoring test-takers. More than one-half of the Black high scorers (53 percent) reported their high school rank as the top quarter as compared to 18 percent of the low scorers. Similarly, 47 percent of the Hispanic high scorers, compared to 13 percent of the Hispanic low scorers, reported ranking in the top quarter of their class. Low scoring test-takers were also more likely to report that they did not remember their high school rank: 36 percent of the low scoring Black and 49 percent of the low scoring Hispanic test-takers, compared to 18 percent of the high scoring Black test-takers and 22 percent of the high scoring Hispanic test-takers (Table 9).

Summary. High scoring Black test-takers were more likely to come from families with higher socio-economic status than low-scoring Black test-takers, and to have reported being in the top quarter of their high school class. Among Hispanic test-takers, high scoring respondents were more likely to not be not fluent in a language other than English, have better educated parents, have mothers who were more likely to work and to work in skilled or professional occupations, and to rank higher in their high school class than low scorers. Both Black and Hispanic male test-takers were more likely to be high scorers than their female counterparts.

Educational Experiences

Respondents were asked a series of questions about their educational attainment and experiences in college and graduate school. High and low scorers differed on the following factors: (1) highest degree obtained; (2) undergraduate major; (3) participation in an undergraduate teacher education program; (4) undergraduate grade point average; (5) graduate education program; (6) graduate school grade point average; (7) participation in basic skills programs; and (8) NTE preparation programs.

Educational attainment. As discussed in an earlier section of this report, 36 percent of the Black and 18 percent of the Hispanic respondents were enrolled in undergraduate school when they took the General Knowledge Test, most during their senior year. Another 35 percent of the Black and 41 percent of the Hispanic test-takers held a bachelor's degree, but reported no graduate work. Twenty-eight percent of the Black and 40 percent of the Hispanic respondents were enrolled in graduate school or held a master's degree or doctorate. In examining successful and unsuccessful test-takers, Black high scorers were more likely to have attended graduate school or obtained a graduate degree than were Black low scorers. Forty percent of the Black high scorers had at least some graduate education compared to 20 percent of the Black low scorers. Forty-three percent of the Black low scorers had not yet received a bachelor's degree compared to 27 percent of the Black high scorers. The patterns were similar for the Hispanic test-takers but the differences were not as great.

Undergraduate major. High scorers were considerably more likely to have not majored or minored in education than were low scorers. Among Black high scorers, 60 percent had neither an education major nor minor in college,

compared to 33 percent of the low scorers. In contrast, 63 percent of the Black low scorers majored in education compared to 30 percent of the high scorers. The patterns were similar for Hispanic respondents where two-thirds of the high scorers had neither education majors nor education minors, compared to 38 percent of the low scorers (Table 11).

Undergraduate teacher education program. Two-thirds of the Black and 56 percent of the Hispanic respondents had participated in undergraduate teacher education programs. High scorers were less likely to have participated in this type of program, however, than low scorers. For example, about three-quarters (74 percent) of the Black low scorers, but half (51 percent) of the Black high scorers fell into this category. Among Hispanic respondents, 63 percent of the low scorers were in teacher education programs compared to 49 percent of the high scorers (Table 12).

Undergraduate teacher education majors. For respondents reporting an undergraduate teacher education major, significant differences emerge across some majors for Black test-takers. High scorers were less likely to have majored in early childhood education (12 percent versus 20 percent) and more likely to have majored in secondary education (29 percent versus 15 percent) than were low scorers. Similar proportions of high and low scorers reported an undergraduate teacher education major in elementary education. One finds basically the same patterns for high and low scoring Hispanic test-takers but the differences are not statistically significant (Table 13).

Undergraduate grade point average. Significant differences exist between high and low scorers on self-reported undergraduate grade point average (GPA). Black high scorers were considerably more likely than low scorers to have an undergraduate GPA of B+ or better and less likely to have a

GPA of C+ or lower. While 29 percent of the Black high scorers reported a GPA of B+ or better, 16 percent of the low scorers had grades this high. Forty-one percent of low scorers reported a GPA of C+ or lower compared to 32 percent of high scorers. A similar proportion of both high (40 percent) and low (43 percent) scorers reported a "B" average. The same patterns appear for low and high scoring Hispanic test-takers, although the distribution of grades is skewed toward the high end of the scale for Hispanic respondents generally (Table 14).

Graduate education program. About one-third of the Black respondents and 44 percent of the Hispanic respondents attended or were currently enrolled in graduate school at the time they took the General Knowledge Test. High scorers were more likely to attend graduate school than low scorers. Among Black test-takers, 42 percent of the high scorers reported attendance in graduate school compared to 26 percent of the low scorers. Nearly 51 percent of the Hispanic high scorers were in graduate school compared to 41 percent of the low scorers (Table 15). Among Black test-takers, high scorers were somewhat more likely than low scorers to be enrolled in a graduate teacher education program (Table 16).

Graduate grade point average. High scorers were much more likely to report a graduate GPA of "A" than were low scorers. One-quarter of Black high scorers had an "A" average compared to eight percent of the low scorers. Similar percentages of both groups reported a "B+" or "B" average. Low scorers were more likely to report a GPA of C+ or lower (19 percent versus six percent of high scorers). Among Hispanic respondents, high scorers were more likely to receive "A"s and less likely to receive "B"s than low scorers. Few of either group of test-takers had a graduate GPA below a "B" (Table 17).

Basic skills programs. Forty-five percent of the Blacks and 36 percent of the Hispanics reported participating in courses, support services, or special programs designed specifically to improve reading, writing, mathematics, or study skills. Low scorers were significantly more likely to take such courses. Fifty-four percent of the Black and 47 percent of the Hispanic low scorers took special courses or programs, compared to 32 percent of the Black and 28 percent of the Hispanic high scorers (Table 18).

NTE preparation. A third of the Black and 14 percent of the Hispanic test-takers reported taking special classes or programs to prepare for the NTE. Low scorers were much more likely to take such preparation. Forty-three percent of the Black and 20 percent of the Hispanic low scorers took NTE preparation classes, compared to 20 percent of the Black and nine percent of the Hispanic high scorers (Table 19).

Summary. High scorers on the General Knowledge Test tended to be further along in their educations, have a high grade point average, and, at the undergraduate level, to have majored or minored in a field outside of education. Among those students who enrolled in an undergraduate education program, those who majored in secondary education scored higher than those in early childhood education programs. At the graduate level, Black high scorers were somewhat more likely to be enrolled in a teacher education program than low scorers. High scorers were less likely than low scorers to have taken special basic skills programs in college and to have taken NTE preparation classes or programs. High and low scorers were equally likely to hold only a bachelor's degree, have an undergraduate education major in elementary education or bilingual education, and be "B" students.

Career Plans

In the survey, respondents were asked a set of questions about their career plans. High and low scorers differed on the following factors: teaching plans, type of certification sought, and type of teaching assignment desired.

Teaching plans. Black and Hispanic high scorers are considerably less likely to plan to make teaching their career than are the low scorers. Forty-seven percent of the Black and 52 percent of the Hispanic high scorers plan to make teaching a career, compared to 67 percent of the Black and 77 percent of the Hispanic low scorers. High scorers are more likely to plan to teach until they can move into another position in education, or until they can change careers (Table 20).

Type of certification sought. A larger percent of Black high scorers report seeking certification in secondary education than low scorers, and fewer high scorers are interested in early childhood education than low scorers. A similar percentage of both groups seek certification in elementary education. For Hispanic test-takers, high and low scorers are not distinguished by the type of certification they seek, although the patterns appear similar to Black test-takers (Table 21).

Type of teaching location sought. While a third of all respondents expressed no preference as to the type of teaching location sought, high scoring Black test-takers expressed greater interest in low-income urban schools than low scorers (25 percent of high scorers, compared to 14 percent of low scorers). High scoring Blacks were also more interested than low scorers in teaching in suburban areas and less interested in a small town or rural teaching assignment. Among Hispanic test-takers, high scorers were more

likely than low scorers to express interest in teaching in suburban schools (Table 22).

These interests may reflect a movement of prospective teachers from rural to urban communities. For example, while 42 percent of the Black and 30 percent of the Hispanic high scorers came from small towns or rural areas, only 10 percent of the Black and 14 percent of the Hispanic high scorers are interested in teaching in this type of community. Twenty-five percent of the high scorers would like to teach in a low income urban high school, although only 15 to 19 percent attended high school in this type of community.

In summary, high scorers are less likely to plan to make teaching a career than low scorers, but are more interested in teaching in a low income urban community or a suburb. High scorers are also more likely to seek certification in secondary education than low scorers.

Regression Analysis

A multiple regression analysis was conducted to investigate the relationships among the background characteristics of the minority test-takers, their educational experiences and their scores on the Test of General Knowledge. Ten independent variables were entered into the regression: gender, father's education, mother's education, father's occupation, mother's occupation, language use (Hispanic sample only), high school rank, educational attainment, undergraduate major (education versus non-education), and undergraduate grade point average.[2] The dependent variable was score on the Test of General Knowledge. The regressions were run separately for Black and Hispanic test-takers.

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[2] The coding of these variables is shown in Appendix C.

The results are reported in Tables 23 and 24. The multiple Rs for the entire set of variables are 0.40 for the Black test-takers and 0.49 for the Hispanic students. For Black students, the most critical factors were undergraduate major, level of father's education and undergraduate grade point average. That is, holding other factors constant, students who had a non-education major, a well-educated father and a high GPA were more likely to score high on the Test of General Knowledge than students who majored in education, did less well in college and came from a lower socioeconomic status background. Undergraduate major, undergraduate GPA and language use contributed the most to Test of General Knowledge scores for Hispanic test-takers. Students with a non-education major and high college GPA, and who reported that they communicate better in English than in any other language performed better on the test. It is interesting that men still perform better than women on the test after accounting for college experiences.

The results of the relational analyses confirm the findings of the descriptive analysis. They emphasize the importance of the college experience, however. When background characteristics are held constant, undergraduate major and GPA are important predictors of test scores. It is not surprising that having a non-education major is positively related to scores on the Test of General Knowledge, since this is a test of general academic knowledge, rather than a test of professional or pedagogical knowledge. It appears that students who take more liberal arts courses (e.g., non-education majors or secondary education students) do better on this examination than those who spend more academic time on education curriculum (e.g., education majors or elementary education students).

Policy Implications

This study provided, for the first time, an expanded baseline of information on NTE test-takers' demographic, socioeconomic, and educational background; education experience in college and graduate school; experiences in teacher education programs; career plans and teaching aspirations; and reasons for taking the test. The study also identified significant differences between successful and unsuccessful minority test-takers. Successful candidates reported doing better in school than unsuccessful candidates, having parents with higher levels of education and employment, more advanced degrees, and college majors other than education.

These results are neither surprising nor novel. They mirror the findings of many other studies that document the relationship between social and economic advantage and achievement. The disparity between the proportion of students from minority and majority groups who can meet teacher certification requirements is directly linked to our society's social and educational structures. Increasing the pool of minority teachers will require governmental and institutional policies that respond to the demographic backgrounds and educational needs of minority students.

Prospective minority teachers are often the first generation in their families to attend college. They come from families with limited fiscal resources and they enter college with less academic preparation than their White peers. Colleges and universities must develop support programs that are geared to the academic and financial needs of these students. Two-thirds of the minority NTE test-takers reported their parents did not attend college; a large majority borrowed money to attend college and had substantial debts at the time of their graduation. These patterns hold for today's college-bound

minority students. About 60 percent of the Black and Hispanic high school seniors who took the Scholastic Aptitude Test (SAT) in 1989 also come from families where the highest level of parental education is a high school diploma. Sixty percent reported family incomes of less than $30,000 (compared to less than a third of the White SAT-takers) and about 80 percent plan to apply for financial aid (College Board, 1989). College-bound minority students enter college with lower high school grade point averages and fewer years of study in core academic subject than White students. As a result, many minority students face academic difficulties and financial burdens in their college years.

Low socioeconomic status students who succeed in college pass the NTE. Colleges and universities can, and do, make the difference for low SES students. Holding family background constant, we found that students' success in college as measured by their undergraduate grade point average and academic program was positively related to NTE test scores. However, a sizeable number of minority test-takers reported undergraduate GPAs below "B." Even more troubling is the number of Black and Hispanic students with good academic records who fail the NTE. The system appears to have failed these students. Colleges and universities should examine their academic programs and grading practices to determine where the problem lies. Institutions should also examine those policies, practices and programs that have been effective in recruiting and educating minority teachers. Nearly one-third of the successful minority NTE test-takers reported having participated in special programs to improve their basic academic skills.

Prospective minority teachers take varied routes to a teaching career. Recruitment policies and training programs must reflect the large number of

minority individuals who choose teaching as a second career. The average age of prospective teachers has been rising over the last several years. Correspondingly, the average age of the minority respondents in this study was about 30. Nearly half reported having had another career or occupation before becoming interested in teaching, employed in a range of jobs.

Policies to increase the number of minority students entering the teaching profession are only the first step in improving the supply of minority teachers. Like other teachers, only half of successful minority test-takers in this study plan to make teaching their career. To retain talented individuals of all races in the classroom, changes must be made in the structure of the teaching profession and to improve the professional environment for teaching.

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TABLES

Table 3
Gender of High and Low Scorers

Race/ethnicity	Male	Female
Black*		
Low scorers	12.1%	87.9%
High scorers	21.1	78.9
Total Sample	15.4	84.6
High-Low Sample	15.7	84.3
Hispanic**		
Low scorers	17.6	82.4
High scorers	26.2	73.8
Total Sample	21.4	78.6
High-Low Sample	24.1	75.9

* Significant at .000 level.
** Significant at .079 level.

Table 4
Language Fluency of High and Low Scorers

Race/ethnicity	Fluent in a Language Other than English	Not Fluent in a Language Other than English
Hispanic*		
Low scorers	89.2%	10.8%
High scorers	75.7	24.3
Total Sample	80.9	19.1
High-Low Sample	79.1	20.9

* Significant at .004 level.

Table 5
Educational Attainment of Mothers of High and Low Scorers

Race/ethnicity	< HS	HS Grad or Trade School	Some College	College Degree or Beyond
Black*				
Low scorers	40.9	34.0	9.3	15.8
High scorers	25.3	33.4	18.1	23.2
Total Sample	34.8	33.1	14.4	17.7
High-Low Sample	34.6	33.8	12.8	18.8
Hispanic**				
Low scorers	59.0	26.0	6.0	9.0
High scorers	42.2	29.7	13.4	14.7
Total Sample	48.0	28.6	11.6	11.8
High-Low Sample	46.3	28.8	11.6	13.3

* Significant at .000 level.
**Significant at .016 level.

Table 6
Educational Attainment of Fathers of High and Low Scorers

Race/ethnicity	< HS	HS Grad or Trade School	Some College	College Degree or Beyond
Black*				
Low scorers	50.4	31.9	7.3	10.5
High scorers	31.9	30.0	18.1	20.1
Total Sample	43.7	31.6	11.4	13.4
High-Low Sample	42.8	31.1	11.7	14.4
Hispanic**				
Low scorers	58.6	26.3	7.1	8.1
High scorers	40.1	25.3	12.2	22.4
Total Sample	45.8	26.0	11.0	17.2
High Low Sample	44.7	25.6	10.9	18.9

*Significant at .000 level.
** Significant at .001 level.

Table 7
Occupations of Mothers of High and Low Scorers

Race/ethnicity	Laborer	Skilled/ Clerical	Manager/ Professional	Full-time Homemaker
Black*				
Low scorers	31.0	16.7	25.0	27.3
High scorers	15.4	25.3	37.6	21.7
Total Sample	24.7	19.9	30.7	24.7
High-Low Sample	24.6	20.3	30.2	25.0
Hispanic**				
Low scorers	17.4	13.3	15.3	54.1
High scorers	15.3	25.1	22.5	37.1
Total Sample	17.0	21.6	20.1	41.4
High-Low Sample	15.8	22.2	20.7	41.2

* Significant at .000 level.
**Significant at .008 level.

Table 8
Occupations of Fathers of High and Low Scorers

Race/ethnicity	Laborer	Skilled/ Clerical	Manager/ Professional	Full-time Homemaker
Black*				
Low scorers	44.2	31.8	22.0	1.9
High scorers	23.4	40.4	35.9	0.3
Total Sample	35.4	36.5	27.1	1.0
High-Low Sample	35.5	35.4	27.8	1.3
Hispanic**				
Low scorers	33.7	36.8	29.5	0.0
High scorers	20.4	32.5	46.7	0.4
Total Sample	24.2	33.0	42.6	0.2
High-Low Sample	23.7	33.6	42.5	0.3

* Significant at .000 level.
** Significant at .011 level.

Table 9
High School Class Rank of High and Low Scorers

Race/ethnicity	Top Quarter	Second Quarter	Bottom Half	Don't Know
Black*				
Low scorers	18.2	29.7	16.2	36.0
High scorers	53.1	22.1	7.0	17.8
Total Sample	32.0	27.5	12.3	28.2
High-Low Sample	32.3	26.6	12.5	28.6
Hispanic*				
Low scorers	13.0	22.0	16.0	49.0
High scorers	46.7	20.6	10.8	21.9
Total Sample	33.1	20.8	12.8	33.3
High-Low Sample	38.4	20.9	12.1	28.6

* Significant at .000 level.

Table 10
Educational Status of High and Low Scorers

Race/ethnicity	Freshman-Junior	College Senior	BA Degree Only	Some Grad. Education	Graduate Degree
Black*					
Low scorers	14.8	28.6	37.0	11.1	8.6
High scorers	10.2	17.2	32.0	25.3	15.3
Total Sample	12.4	23.6	35.1	17.2	11.7
High-Low Sample	12.9	24.0	35.0	16.8	11.3
Hispanic**					
Low scorers	8.1	10.1	48.5	22.2	11.1
High scorers	2.3	14.3	35.5	29.0	18.9
Total Sample	4.3	14.1	41.4	24.4	15.8
High-Low Sample	3.7	13.3	38.7	27.3	17.0

* Significant at .000 level.
**Significant at .005 level.

Table 11
Undergraduate Major of High and Low Scorers

Race/ethnicity	Education Major	Non-educ. major, Education minor	Non-educ. major, Non-educ. minor
Black*			
Low scorers	62.6	4.3	33.0
High scorers	29.7	10.2	60.2
Total Sample	48.9	7.2	43.9
High-Low Sample	49.4	6.7	44.0
Hispanic*			
Low scorers	46.1	15.7	38.2
High scorers	22.3	12.0	65.7
Total Sample	35.8	12.7	51.6
High-Low Sample	28.2	12.9	58.9

* Significant at .000 level.

Table 12
Enrollment in Undergraduate Teacher Education Program, High and Low Scorers

Race/ethnicity	Yes	No
Black*		
Low scorers	74.3	25.7
High scorers	51.2	48.8
Total Sample	65.5	34.5
High-Low Sample	65.0	35.0
Hispanic**		
Low scorers	62.9	37.1
High scorers	48.9	51.2
Total Sample	56.1	43.9
High-Low Sample	52.2	47.8

* Significant at .000 level.
**Significant at .016 level.

Table 13
Undergraduate Teacher Education Major of High and Low Scorers

Race/ethnicity	Early Child	Elem. Educ.	Junior High	Senior High	Spec. Educ.	Biling. Educ.
Black*						
Low scorers	20.4	38.0	8.7	14.7	14.4	0.5
High scorers	12.1	35.6	12.9	29.2	8.0	0.4
Total Sample	17.0	38.2	10.6	19.7	11.7	0.4
High-Low Sample	17.8	27.2	10.0	19.4	12.3	0.5
Hispanic						
Low scorers	13.0	37.0	8.3	14.8	7.4	16.7
High scorers	8.3	36.5	9.1	21.7	7.0	13.9
Total Sample	9.9	37.2	8.2	19.3	7.7	14.8
High-Low Sample	9.8	36.7	8.9	19.5	7.1	14.8

* Significant at .000 level.

Table 14
Undergraduate Grade Point Average of High and Low Scorers

Race/ethnicity	A	B+	B	C+	C or Lower
Black*					
Low scorers	2.2	14.1	42.6	31.9	9.2
High scorers	4.6	24.0	39.6	25.1	6.7
Total Sample	2.7	17.9	42.6	29.8	7.0
High-Low Sample	3.2	18.1	41.4	29.2	8.2
Hispanic**					
Low scorers	6.5	20.4	43.0	23.7	6.5
High scorers	9.9	31.3	42.8	15.1	1.0
Total Sample	8.2	27.4	45.8	16.2	2.6
High-Low Sample	9.1	28.7	42.8	17.1	2.3

* Significant at .000 level.
**Significant at .003 level.

Table 15
Graduate School Attendance of High and Low Scorers

Race/ethnicity	Yes	No
Black*		
Low scorers	25.6	74.4
High scorers	41.7	58.3
Total Sample	32.1	67.9
High-Low Sample	32.1	67.9
Hispanic**		
Low scorers	41.2	58.8
High scorers	50.8	49.2
Total Sample	43.7	56.3
High-Low Sample	48.4	51.6

* Significant at .000 level.
**Significant at .092 level.

Table 16
Graduate Teacher Education Program Enrollment of High and Low Scorers

Race/ethnicity	Yes	No
Black*		
Low scorers	24.9	75.1
High scorers	34.7	65.3
Total Sample	29.4	70.6
High-Low Sample	28.9	71.2
Hispanic		
Low scorers	46.0	54.0
High scorers	49.7	50.3
Total Sample	44.2	55.8
High-Low Sample	48.8	51.2

* Significant at .001 level.

Table 17
Graduate Grade Point Average of High and Low Scorers

Race/ethnicity	A	B+	B	C+	C or Lower
Black*					
Low scorers	8.4	44.2	27.9	13.6	5.8
High scorers	25.6	42.1	26.8	4.9	0.6
Total Sample	17.8	41.4	29.8	8.7	2.3
High-Low Sample	17.3	43.1	27.4	9.1	3.1
Hispanic**					
Low scorers	16.3	32.6	46.9	4.1	0.0
High scorers	31.7	41.3	24.0	2.4	1.0
Total Sample	27.2	37.6	30.3	4.2	0.7
High-Low Sample	28.2	39.4	29.2	2.8	0.5

* Significant at .000 level.
**Significant at .022 level.

Table 18
Special Programs to Improve Basic Skills, High and Low Scorers

Race/ethnicity	Yes	No
Black*		
Low scorers	53.9	46.1
High scorers	31.8	68.2
Total Sample	44.7	55.3
High-Low Sample	44.9	55.1
Hispanic*		
Low scorers	47.0	53.0
High scorers	28.0	72.0
Total Sample	36.2	63.8
High-Low Sample	32.7	67.3

*Significant at .000 level.

Table 19
NTE Preparation Courses or Programs, High and Low Scorers

Race/ethnicity	Yes	No
Black*		
Low scorers	43.1	56.9
High scorers	19.9	80.1
Total Sample	33.1	66.9
High-Low Sample	33.7	66.3
Hispanic**		
Low scorers	19.8	80.2
High scorers	8.7	91.3
Total Sample	14.0	86.0
High-Low Sample	11.5	88.5

*Significant at .000 level.
**Significant at .002 level.

Table 20
Career Plans of High and Low Scorers

Race/ethnicity	Make Teaching a Career	Teach/Change Career in Educ.	Teach/Change Career not Educ.
Black*			
Low scorers	66.7	16.6	9.1
High scorers	46.5	30.3	13.2
Total Sample	56.9	23.0	11.7
High-Low Sample	58.6	22.1	10.8
Hispanic**			
Low scorers	77.0	12.0	4.0
High scorers	51.8	27.7	12.4
Total Sample	59.6	22.0	10.4
High-Low Sample	58.0	23.8	10.3

* Significant at .000 level.
* Significant at .002 level.

Table 21
Type of Certification Sought by High and Low Scorers

Race/ethnicity	Early Child	Elem. Educ.	Junior High	Senior High	Spec. Educ.	Biling. Educ.
Black*						
Low scorers	17.7	37.8	9.8	16.1	15.2	0.8
High scorers	10.3	33.6	14.9	26.5	8.2	2.8
Total Sample	14.0	36.7	12.0	20.2	12.7	1.4
High-Low Sample	14.6	36.1	11.9	20.4	12.4	1.6
Hispanic						
Low scorers	11.5	31.3	8.8	13.2	9.4	25.3
High scorers	4.8	34.4	10.4	16.8	6.3	25.1
Total Sample	7.2	33.6	8.4	15.2	7.9	25.3
High-Low Sample	6.5	33.6	10.0	15.9	7.1	25.2

* Significant at .000 level.

Table 22
Type of Teaching Location Sought by High and Low Scorers

Race/ethnicity	Low Income Urban	Middle/ Upper Inc. Urban	Suburb.	Small Town or Rural	No Prefer.
Black*					
Low scorers	13.9	17.7	6.7	21.8	35.5
High scorers	24.9	16.2	15.6	10.2	30.9
Total Sample	19.4	17.5	10.9	16.2	32.5
High-Low Sample	18.2	17.1	10.2	17.2	33.7
Hispanic**					
Low scorers	24.7	16.5	4.1	11.3	42.3
High scorers	21.4	16.2	15.5	14.1	29.3
Total Sample	22.8	16.0	11.4	13.0	34.4
High-Low Sample	22.2	16.3	12.7	13.4	32.6

* Significant at .000 level.
** Significant at .019 level.

Table 23

Predictors of Scores on Test of General Knowledge
Black Test-takers (n=1381)

Independent Variables	Raw Regression Weight	Standardized Regression Weight	T Statistic
Undergraduate Major	2.9147	0.2334	8.7056
Father's Education	1.3794	0.1259	3.5890
Undergraduate GPA	1.7329	0.1379	5.4712
Father's Occupation	1.2360	0.0877	2.7680
Education Attainment	0.8337	0.0855	3.2273
Sex-Male	-2.0528	-0.0650	-2.5454
Mother's Occupation	0.4220	0.0431	1.3423
Mother's Education	0.4513	0.0430	1.1798
High School Rank	0.2483	0.0240	0.9691
Multiple R	0.4044		

Table 24

Predictors of Scores on Test of General Knowledge
Hispanic Test-takers (n=582)

Independent Variables	Raw Regression Weight	Standardized Regression Weight	T Statistic
Undergraduate Major	4.0366	0.2877	7.2534
Undergraduate GPA	2.8570	0.2013	5.2878
Other Language	-4.9594	-0.1520	-4.0230
Father's Education	1.1130	0.0974	1.9252
Sex-Male	-3.2320	-0.1035	-2.6473
Mother's Occupation	0.7326	0.0674	1.5619
High School Rank	-0.8425	-0.0775	-2.0805
Education Attainment	0.7302	0.0592	1.5431
Mother's Education	0.5288	0.0423	0.8459
Father's Occupation	0.1667	0.0104	0.2264
Multiple R	0.4893		

FIGURES

Figure 1

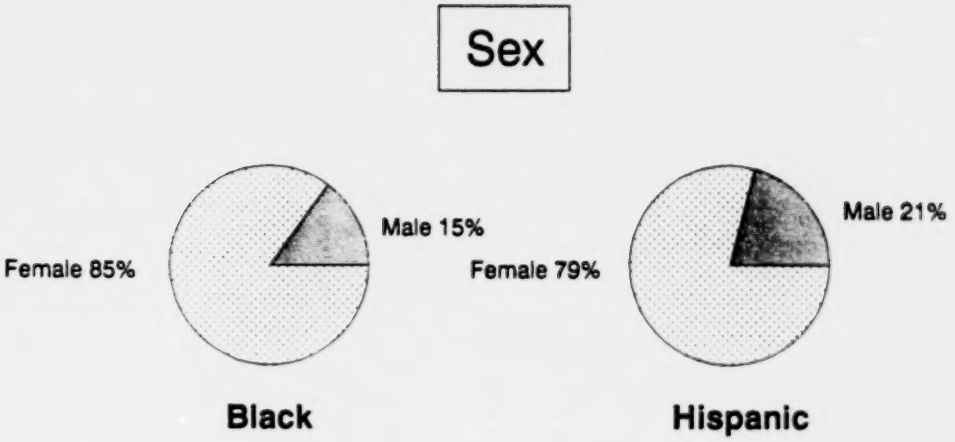
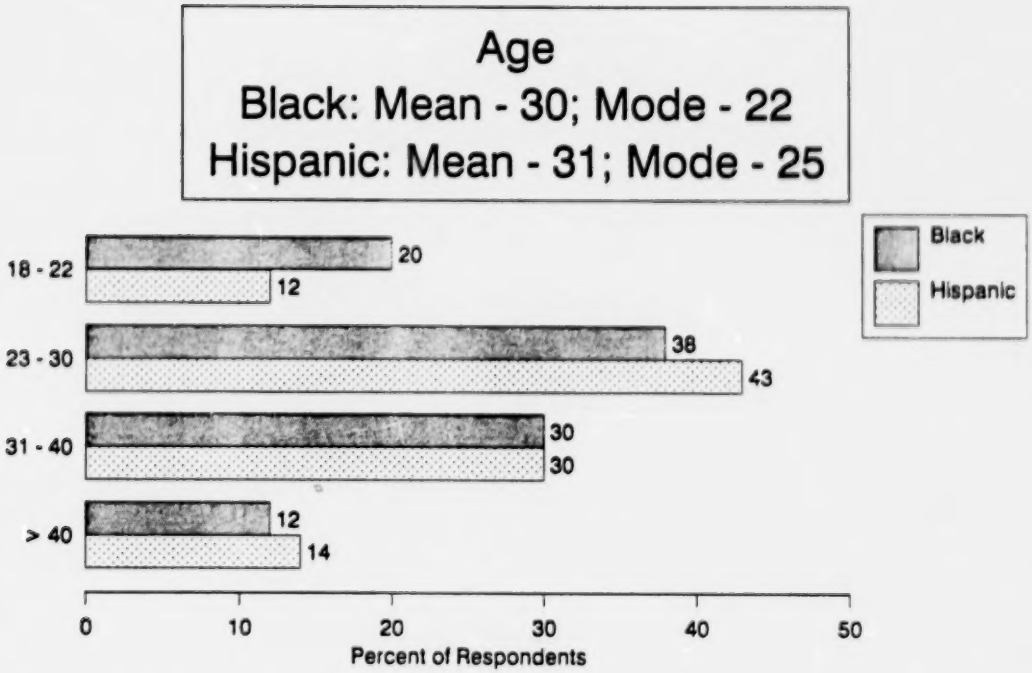


Figure 2



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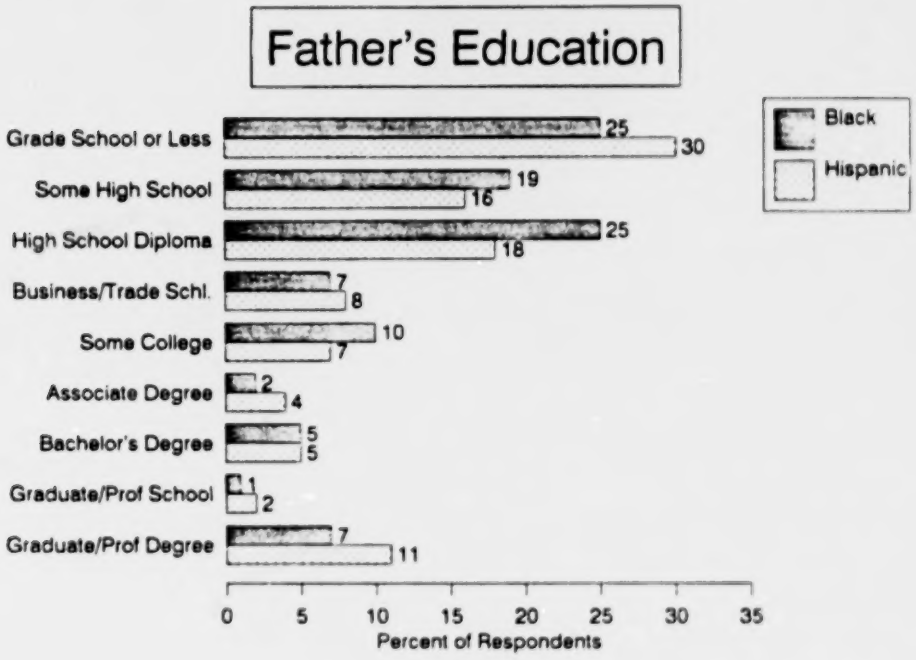

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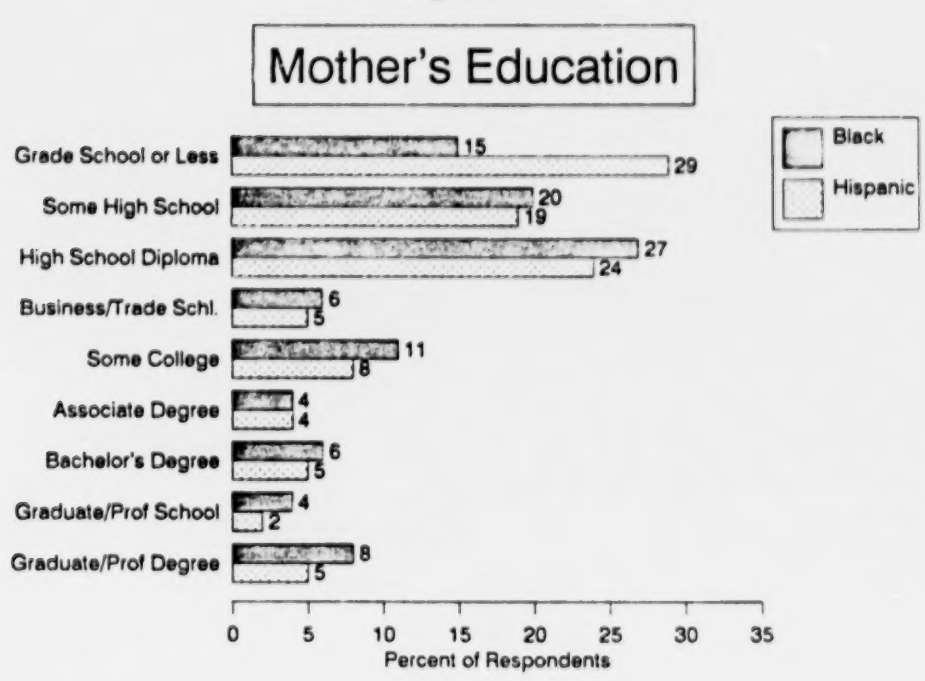

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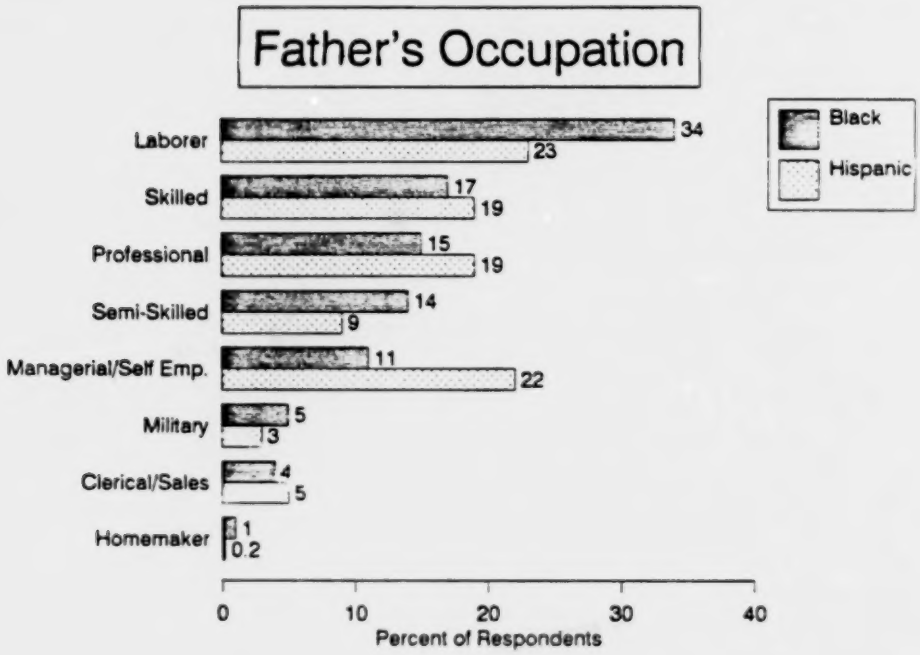
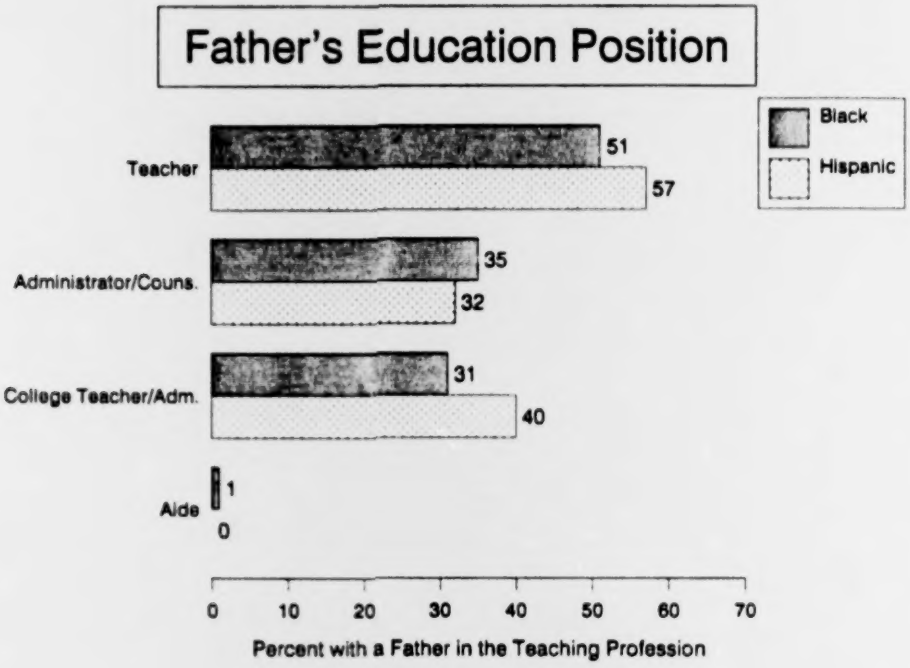


Figure 6

Figure 7



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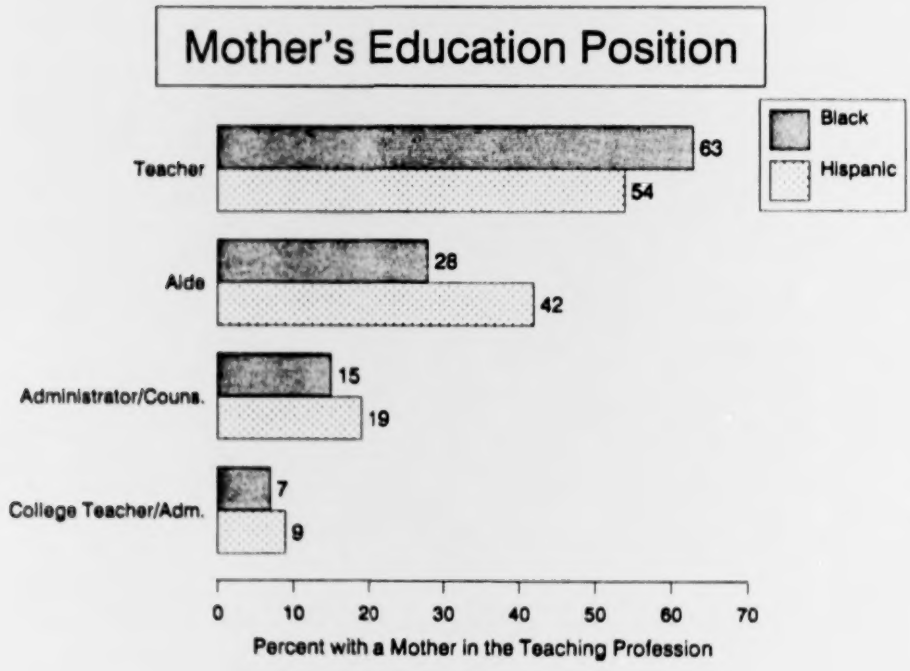

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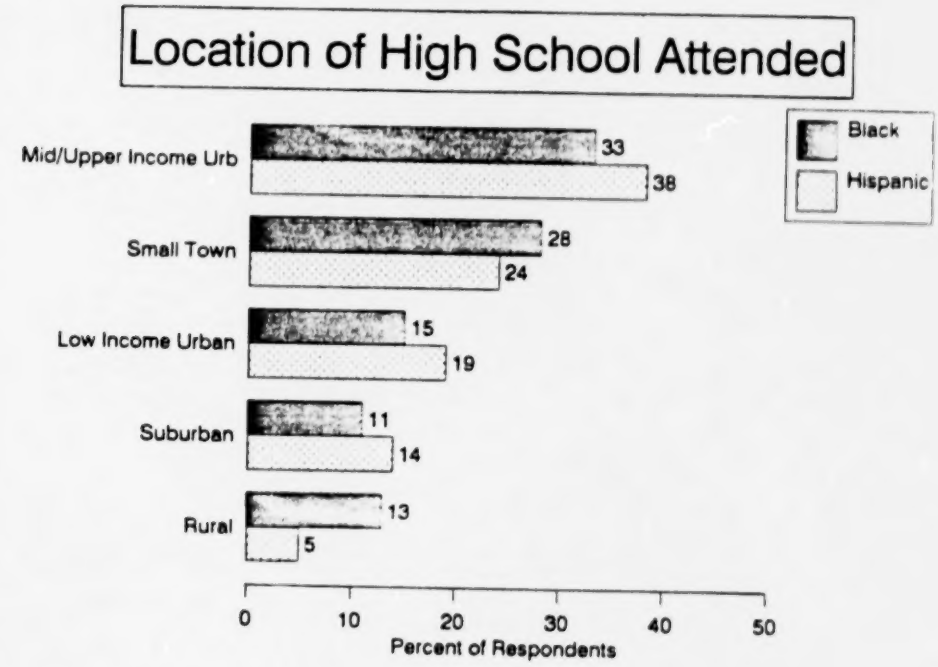

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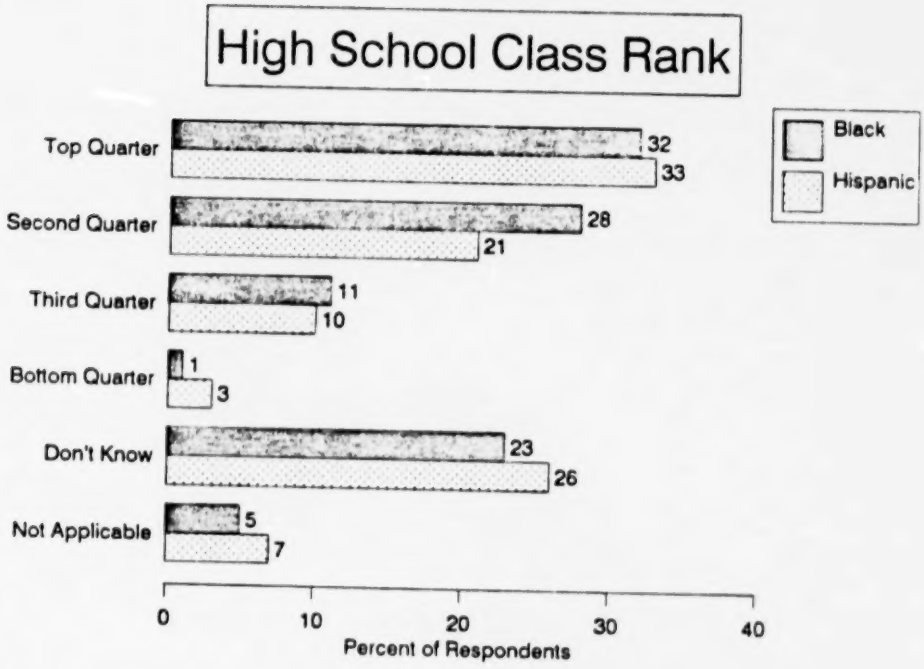


Figure 11

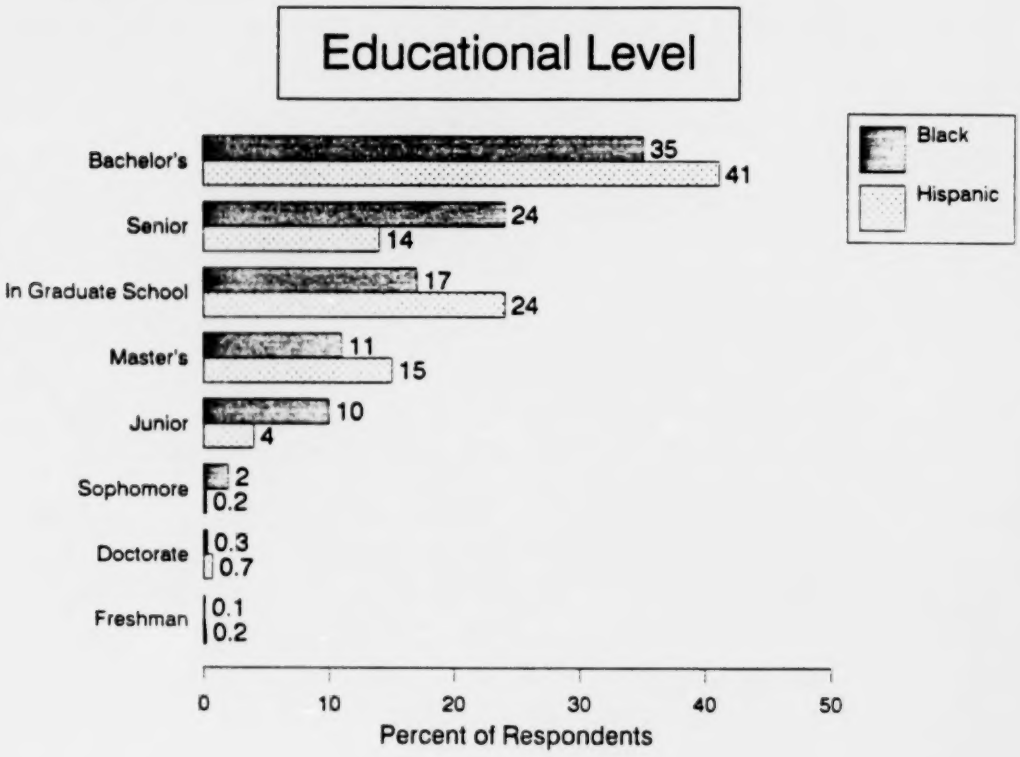
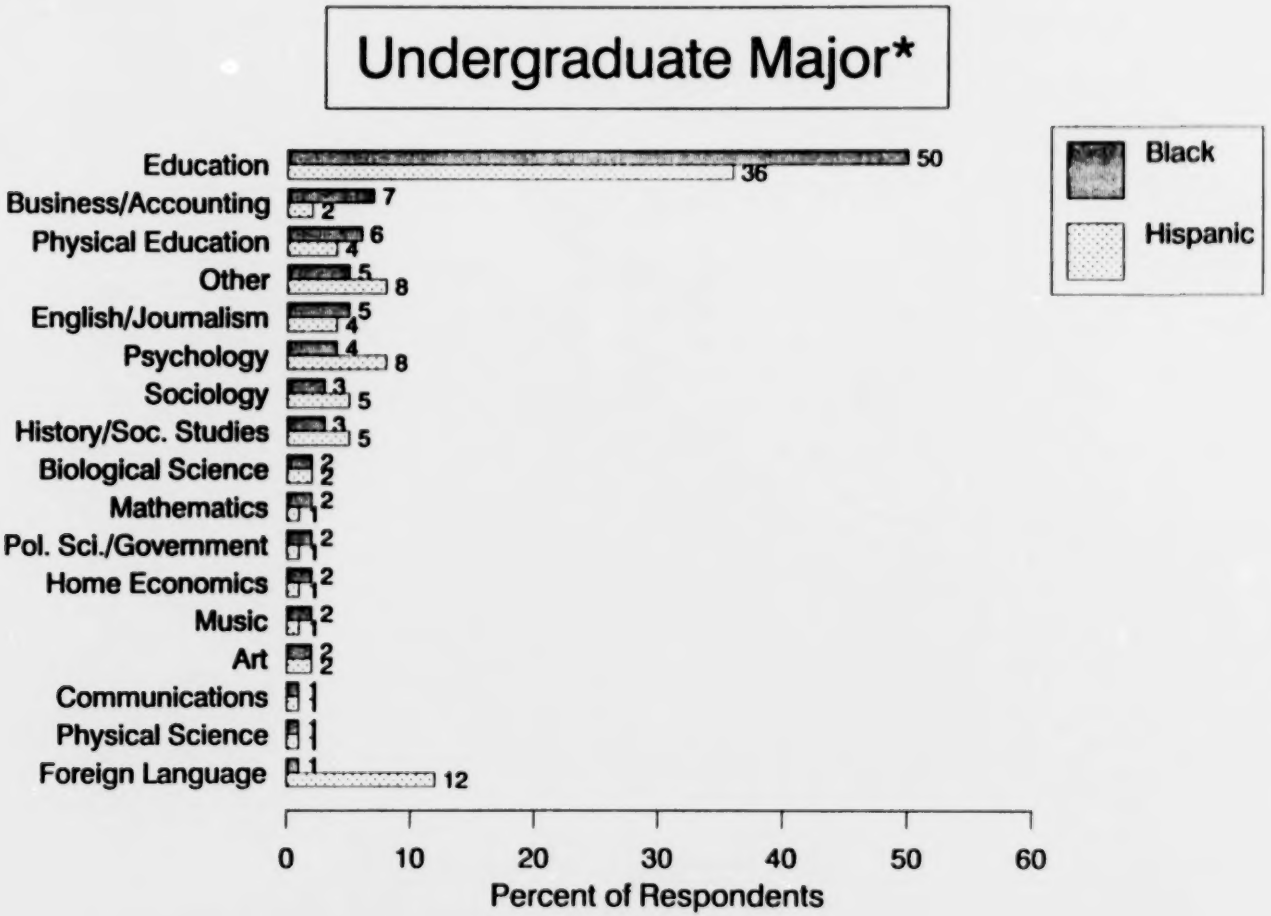
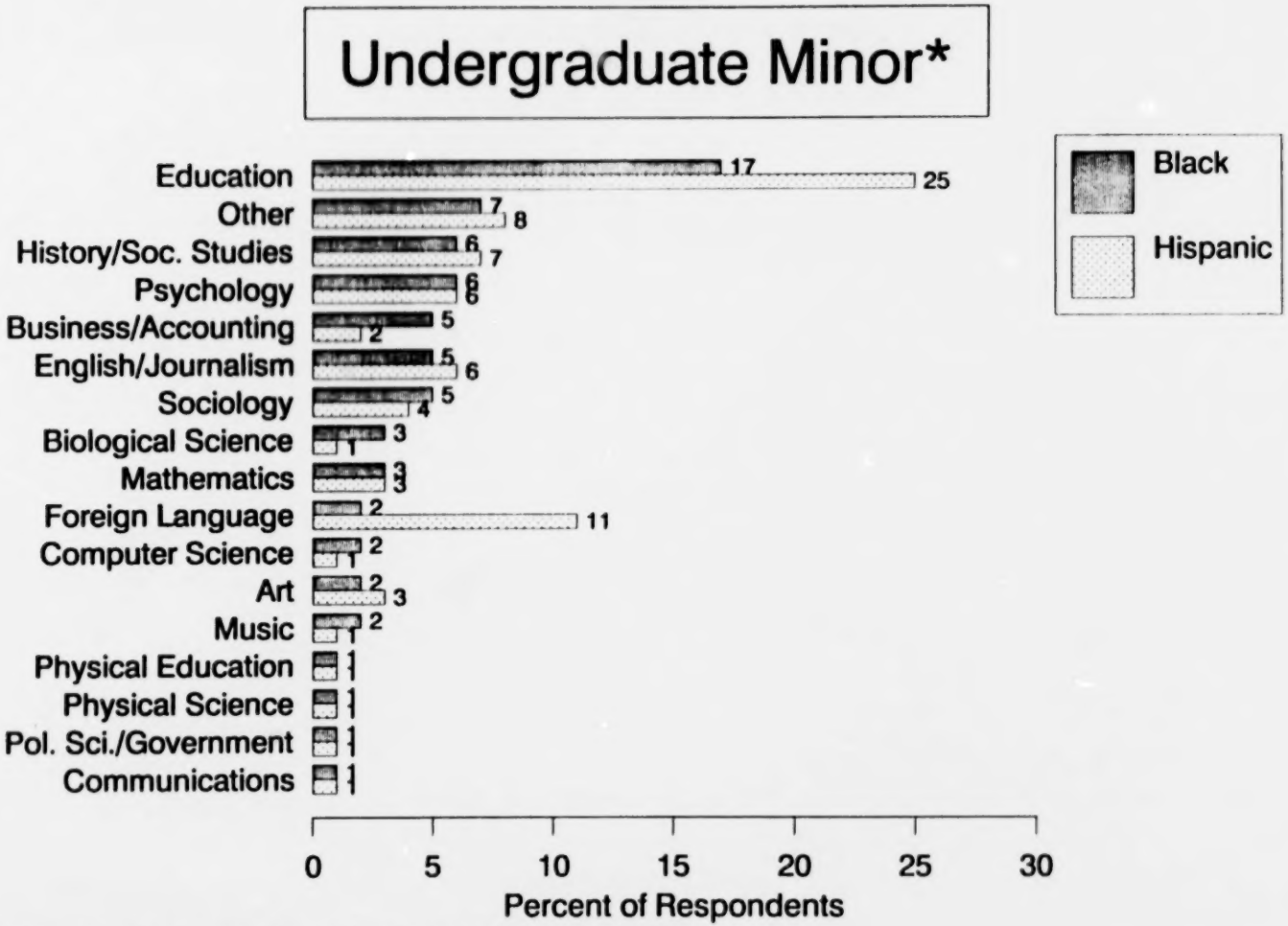

Educational Level
Black
Hispanic
Bachelor's
35
41
Senior
24
14
In Graduate School
17
24
Master's
11
15
Junior
10
4
Sophomore
2
0.2
Doctorate
0.3
0.7
Freshman
0.1
0.2
0
10
20
30
40
50
Percent of Respondents

Figure 12



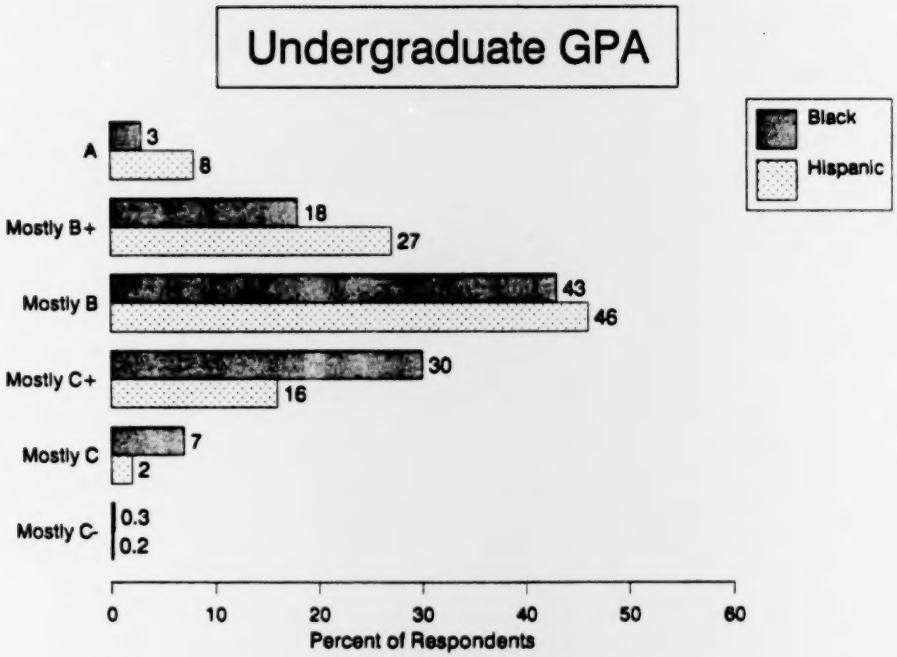
*Majors accounting for at least 1% of respondents.

Figure 13



* Minors accounting for at least 1% of respondents

Figure 14



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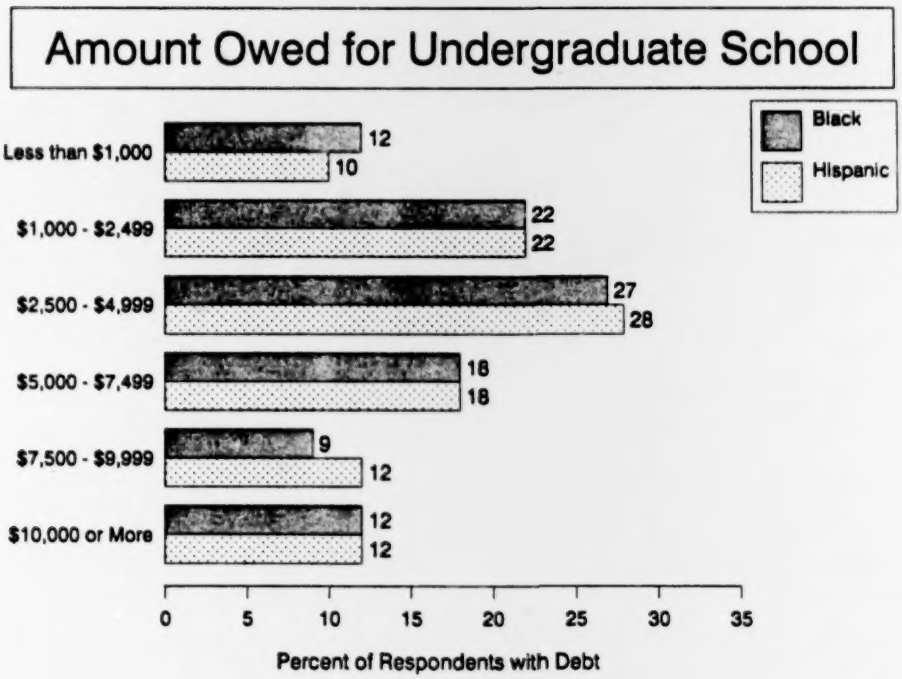

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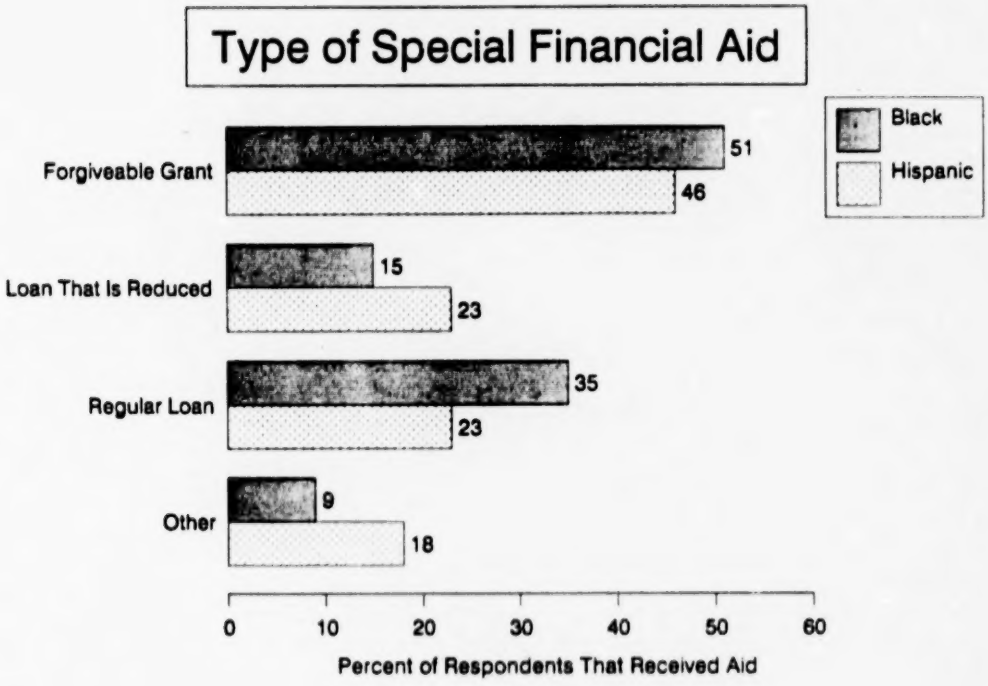

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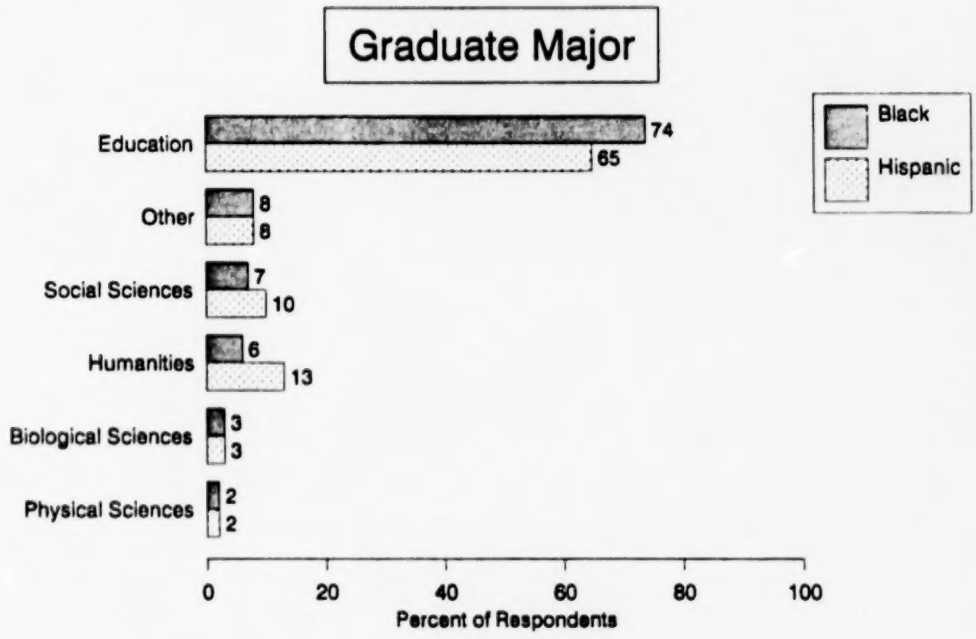
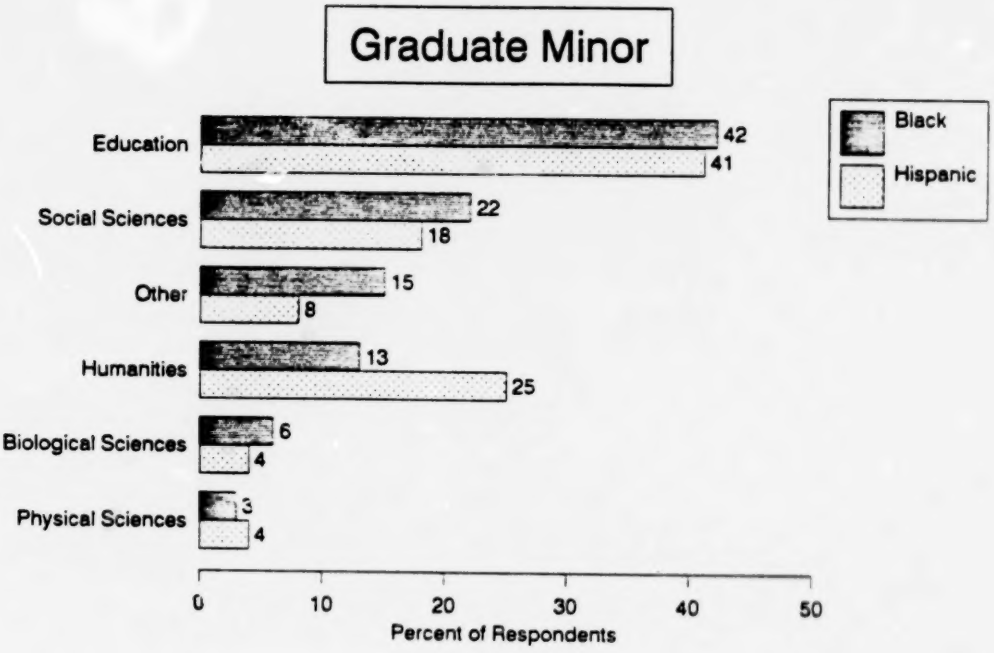


Figure 18



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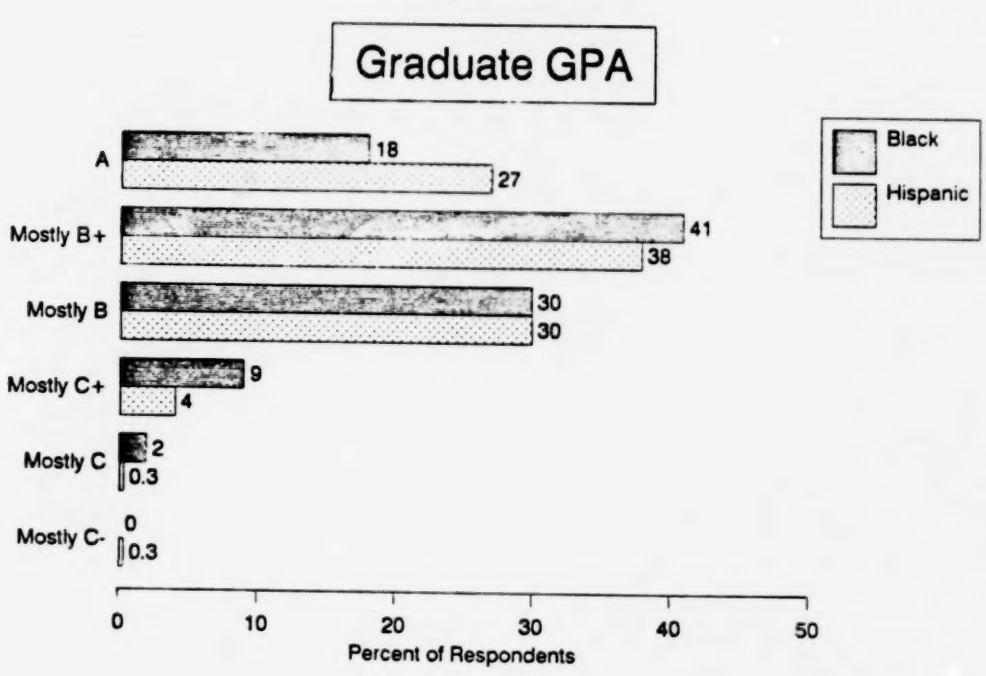

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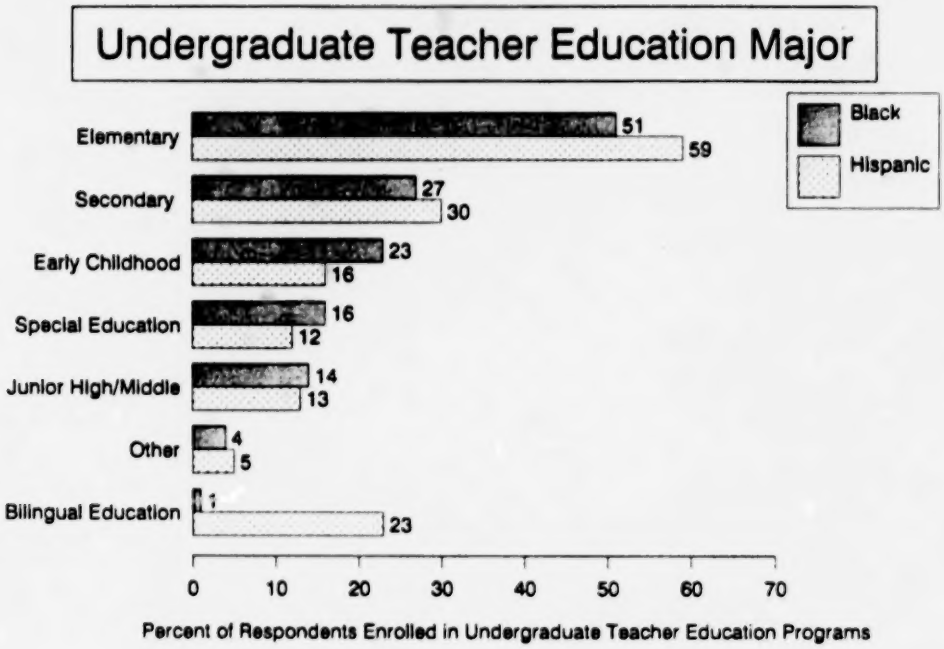

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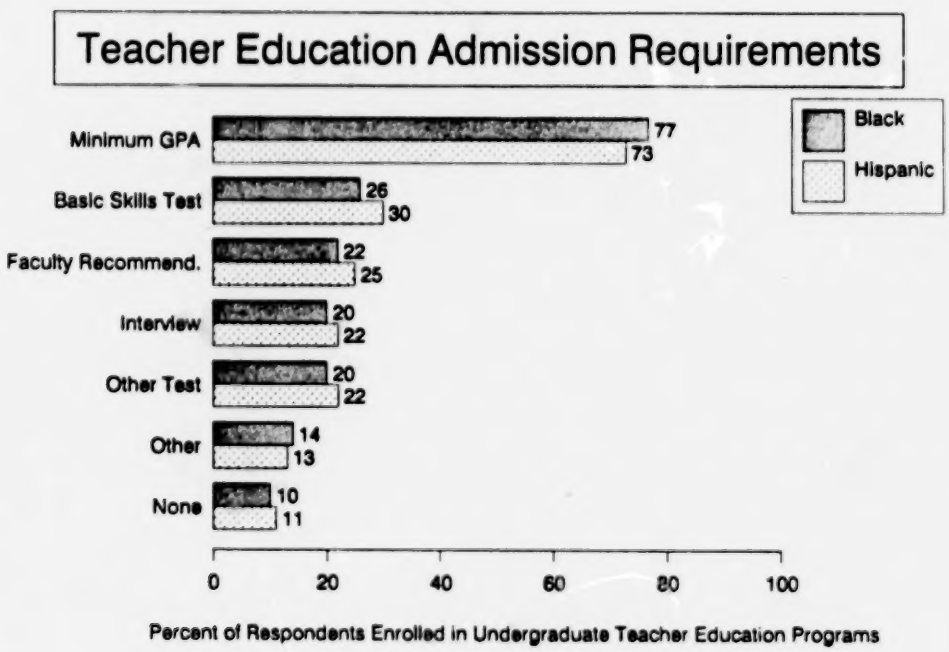

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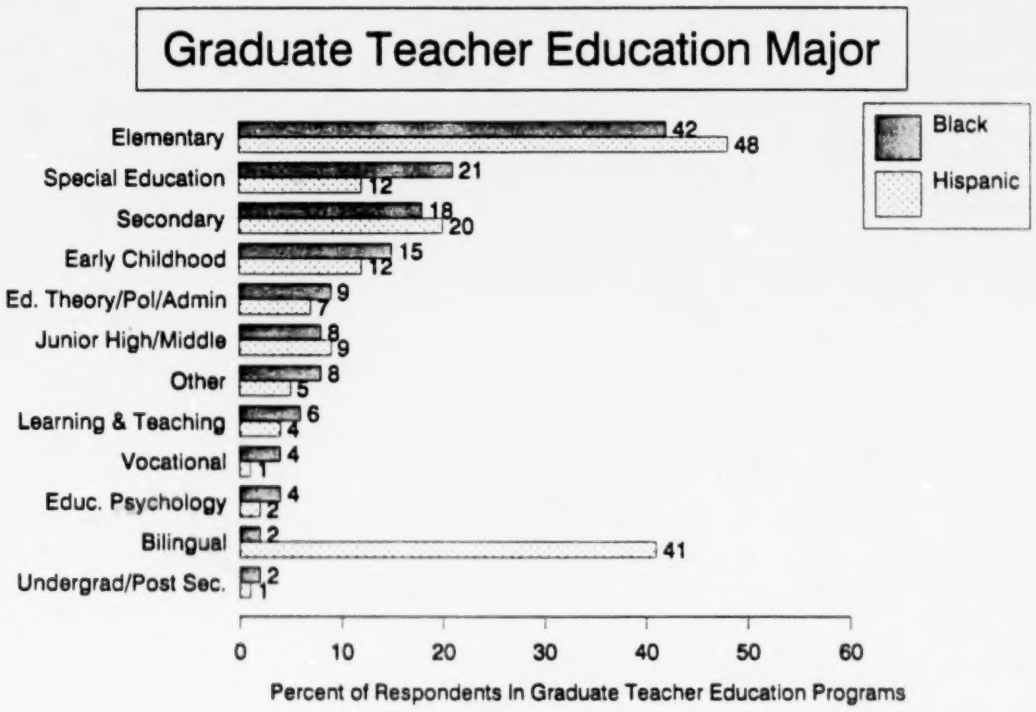

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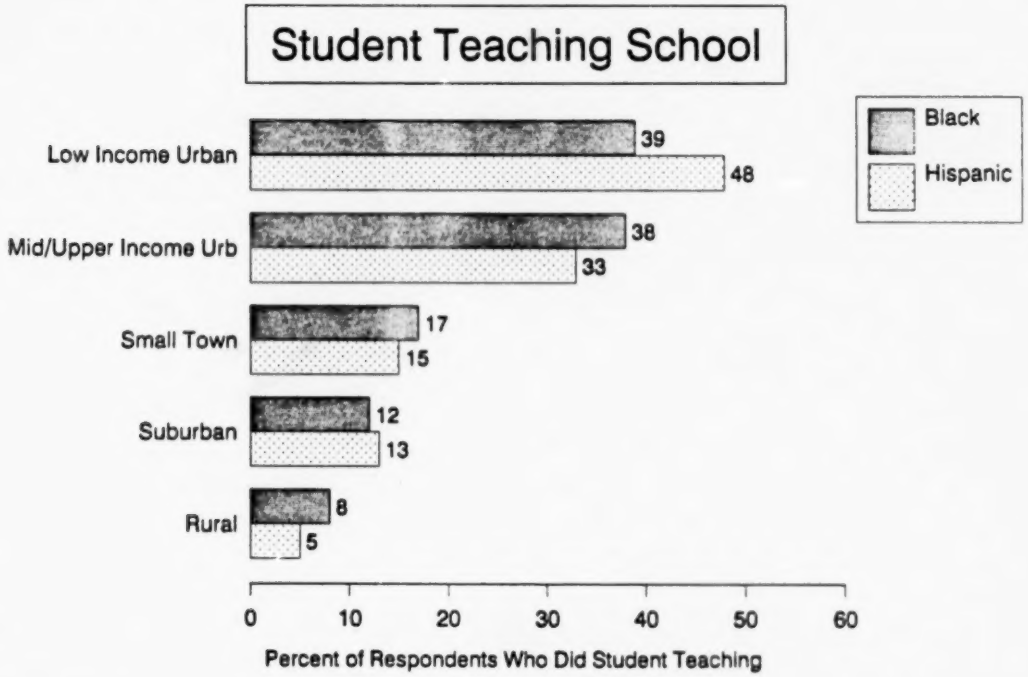

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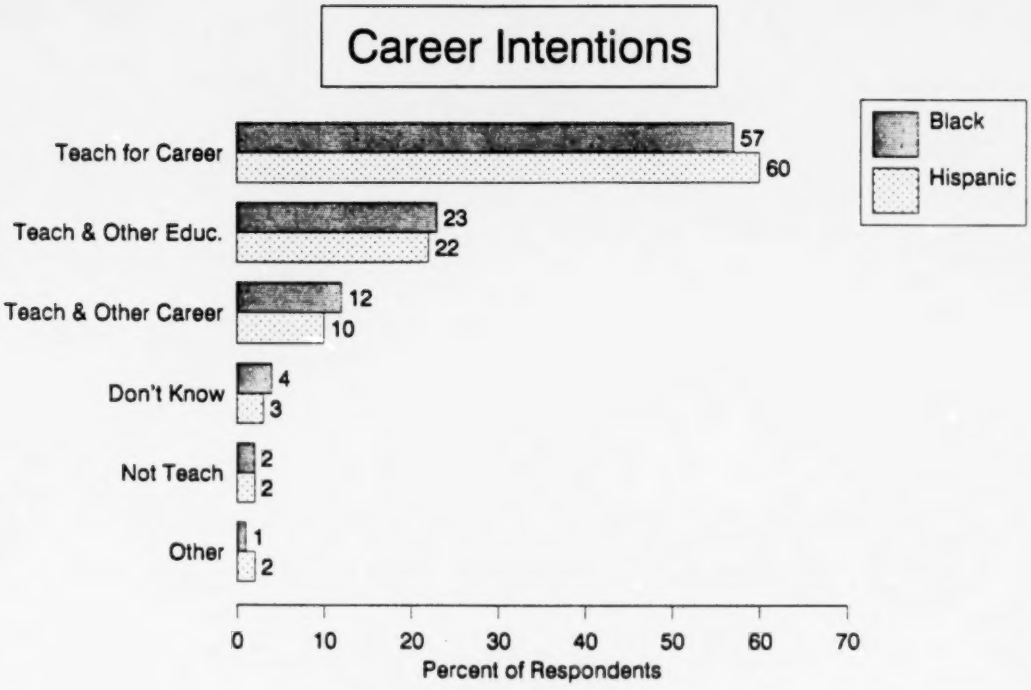

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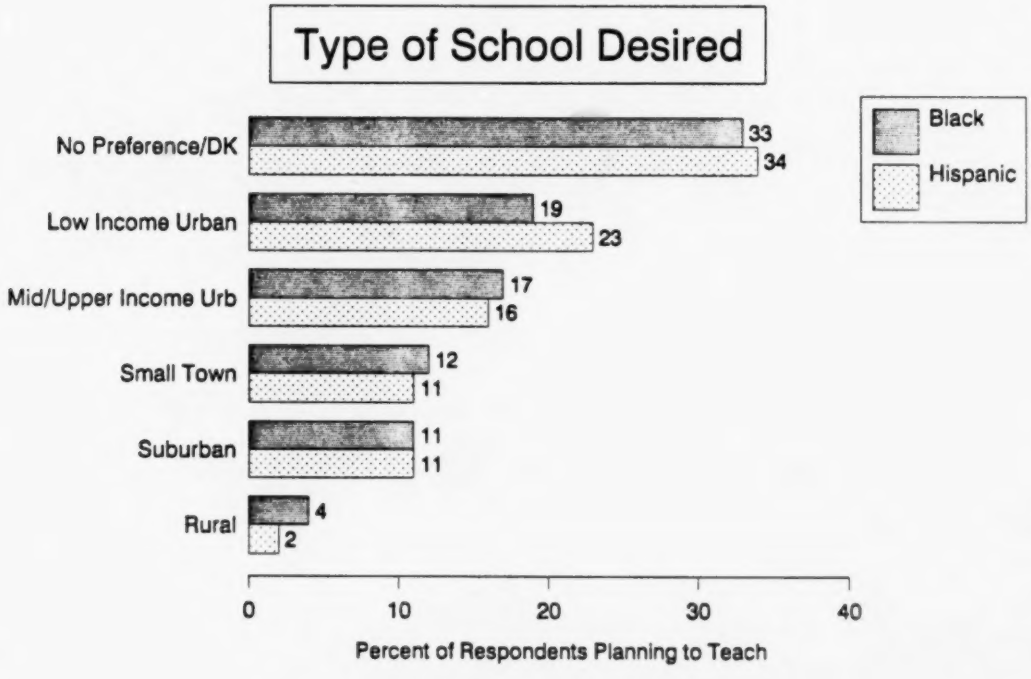


Figure 26

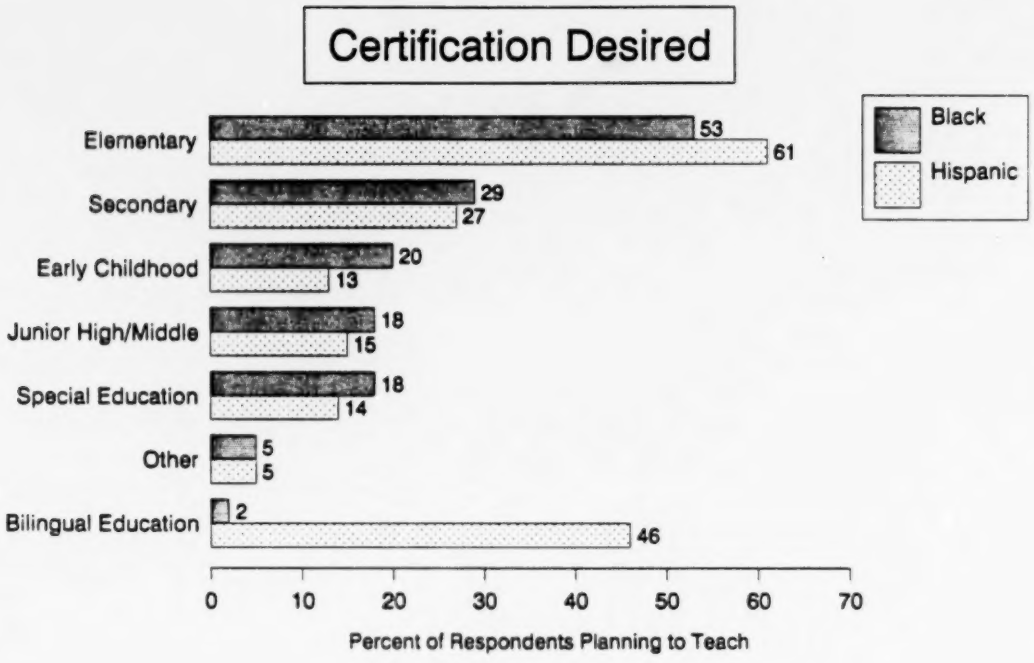
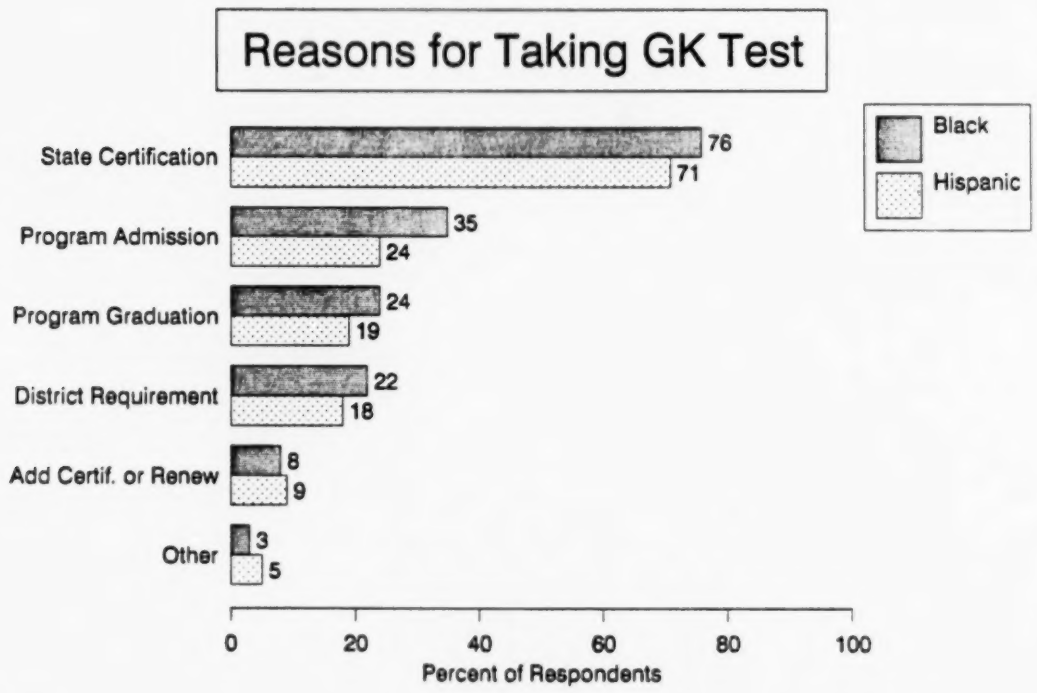


Figure 27



Appendix A: Representativeness of Survey Respondents

The percentage of those who do not respond to a survey, and the extent to which these non-respondents are different from the respondents, will affect survey estimates. The preliminary analysis presented here uses data from the NTE test files to compare respondents and non-respondents on three characteristics -- mean General Knowledge score, age, and race/ethnicity. In general, when respondents and non-respondents are similar, the response rate does not affect survey estimates.

Appendix Table 1 compares the total group of respondents and non-respondents on mean General Knowledge score and age. As is shown in the Table, respondents and non-respondents have identical GK means and very similar ages.

Appendix Table 1

Mean General Knowledge Score and Age: Respondent and Non-respondents

	Respondents	Non-respondents
Mean GK Score	646	646
(Std. Dev.)	13.38	13.46
Mean Age	32.0	31.6
(Std. Dev.)	9.26	9.18

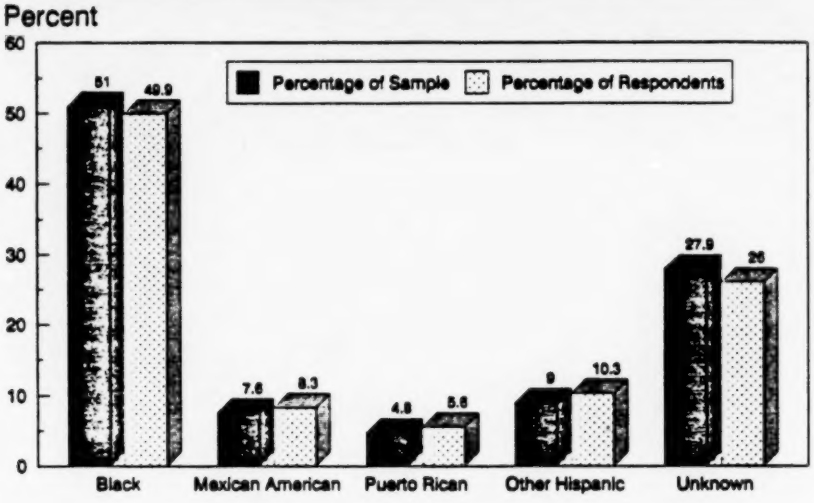
Appendix Figure 1 examines survey response rates by racial/ethnic group, compared with the racial/ethnic composition of the total sample, to see whether there is response bias on this variable. As the figure shows, the racial/ethnic composition of respondents is similar to the racial/ethnic composition of the total sample. For example, 51 percent of the sample was Black; nearly 50 percent of the respondents were Black.

Appendix Figure 2 shows mean General Knowledge scores for each racial/ethnic group to see if respondents and non-respondents differ on this very important dimension. They do not. The average scores of respondents and non-respondents, by race/ethnicity, are remarkably similar.

In sum, based on these data, we are able to report the survey results with the confidence that the survey estimates are reflective of the total survey sample and are free of non-response bias.

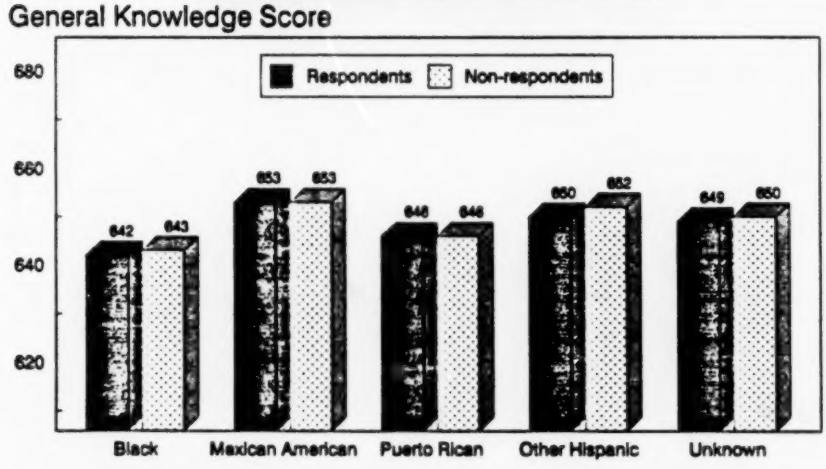
Appendix Figure 1

NTE Survey Sample Composition and Response Rates by Race/Ethnicity



Appendix Figure 2

Mean General Knowledge Scores of Respondents and Non-respondents, by Race/Ethnicity



QUESTIONNAIRE FOR NTE TAKERS

Directions: Circle the appropriate number or letter, or write in the information requested.

This section of the questionnaire is about taking the NTE and about your career plans.

1. Why did you take the General Knowledge Test of the NTE Core Battery? (Circle all that apply.)

   A. For admission to a teacher education program
   B. For graduation from a teacher education program
   C. To meet initial state certification requirements
   D. To renew or obtain additional state certification
   E. Because the district I am applying to requires it
   F. Other reason (specify _____)

2. Which of the following statements best characterizes your current thinking about a career in teaching? (Circle one.)

   1. I plan to make teaching my career. ----------> ANSWER Q. 3
   2. I plan to teach until I can move into another position (e.g., counseling, administrative) in education. ------> ANSWER Q. 3
   3. I plan to teach for a while but eventually pursue another career. ----------> ANSWER Q. 3
   4. I don't plan to teach at all. ----------> SKIP TO Q. 5
   5. I don't know at this point. ----------> SKIP TO Q. 5
   6. Something else: What? _____

3. In what type of school would you most like to teach? (Circle one.)

   1. Low income urban
   2. Middle or upper income urban
   3. Suburban
   4. Small town (NOT suburban)
   5. Rural
   6. No preference (or I don't know)

4. Which of the following describes the type of certification you hope to obtain? (Circle all that apply.)

   A. Early childhood education
   B. Elementary education
   C. Junior high/middle school education
   D. Secondary education
   E. Special education
   F. Bilingual education
   G. Other (Specify _____)

This section of the questionnaire is about your educational background.

5. Are you (or were you) enrolled in an undergraduate teacher education program? (Circle one.)

   1. Yes ——————————> ANSWER QUESTION 6.
   2. No ——————————> SKIP TO QUESTION 8.

6. Which of the following describe(s) your concentration or major within the undergraduate teacher education program in which you are (were) enrolled? (Circle all that apply.)

   A. Early childhood education
   B. Elementary education
   C. Junior high/middle school education
   D. Secondary education
   E. Special education
   F. Bilingual education
   G. Other (Specify _____)

7. What were the requirements for admission to the last two years of the undergraduate teacher education program in which you are (were) enrolled? (Circle all that apply.)

   A. Minimum grade point average (GPA)
   B. Basic skills test
   C. Other test (e.g., college admissions test, PPST)
   D. Faculty recommendations
   E. Interview
   F. Other (Specify _____)
   0. There were no requirements

8. Are you (or were you) enrolled in a graduate teacher education program? (Circle one.)

   1. Yes ——————————> ANSWER QUESTION 9.
   2. No ——————————> SKIP TO QUESTION 10.

9. Which of the following describe(s) your concentration or major within the graduate teacher education program in which you are (were) enrolled? (Circle all that apply.)

   A. Early childhood education
   B. Elementary education
   C. Junior high/middle school education
   D. Secondary education
   E. Special education
   F. Bilingual education
   G. Vocational Education
   H. Educational Theory, Policy, and/or Administration
   I. Learning and Teaching
   J. Educational Psychology
   K. Undergraduate or post-secondary education

   O. Other (Specify _____)

10. Have you participated in practicum or done any student teaching? (Circle one.)

    1. Yes ——————> ANSWER QUESTION 11
    2. No ——————> SKIP TO QUESTION 12

11. How would you describe the location of the school in which you did your practicum or student teaching? (Circle all that apply.)

A. Low income urban
B. Middle or upper income urban
C. Suburban
D. Small town (NOT suburban)
E. Rural

12. Which of the following best describes your current educational level? (Circle only one.)

1. Freshman
2. Sophomore
3. Junior
4. Senior
5. Hold bachelor's degree
6. Enrolled in graduate school
7. Hold master's degree
8. Hold doctoral degree

13. Did you attend or are you currently enrolled in a graduate program?

1. Yes ----------> ANSWER QUESTION 14
2. No ----------> SKIP TO QUESTION 18

14. What graduate institution did you receive a degree from or are you now attending? (IF YOU ATTENDED MORE THAN ONE GRADUATE INSTITUTION, GIVE THE NAME OF THE INSTITUTION YOU ATTENDED MOST RECENTLY.)

Name of Institution: _____ State: __ __

15. What are (were) your graduate major and minor? (Write the appropriate number on each of the lines below.)

a. Graduate Major: __ __

b. Graduate Minor: __ __

1. Biological sciences
2. Education
3. Humanities
4. Physical sciences
5. Social sciences
6. Other (Specify _____)

16. How many graduate-level courses in education have you taken, including courses you may be taking now?

Number of graduate-level education courses taken: ____

17. Which of the following best describes your overall graduate grade point average (GPA)? (Circle one.)

1. A (3.75 to 4.00)
2. Mostly B+ (3.25 to 3.74)
3. Mostly B (2.75 to 3.24)
4. Mostly C+ (2.25 to 2.74)
5. Mostly C (1.75 to 2.24)
6. Mostly C- (1.25 to 1.74)
7. Mostly D (lower than 1.24)

18. What undergraduate institution did you receive a degree from or are you now attending?

Name of Institution: _____ State: __ __

19. What are (were) your undergraduate major and minor? (Write the appropriate number on each of the lines below.)

a. Undergraduate Major: __ __

b. Undergraduate Minor: __ __

1. Art
2. Agriculture
3. Anthropology
4. Biological Science
5. Business/Accounting
6. Communications
7. Computer Science
8. Economics
9. Education
10. English or Journalism
11. Engineering
12. Foreign Language
13. History/Social Studies
14. Home Economics
15. Mathematics
16. Music
17. Philosophy or Religion
18. Physical Education
19. Physical Science
20. Political Science/Government
21. Pre-law
22. Pre-med
23. Psychology
24. Sociology
25. Speech or Drama
26. Other (Specify_____)

00. None

20. Which of the following best describes your overall undergraduate grade point average (GPA)? (Circle o

1. A (3.75 to 4.00)
2. Mostly B+ (3.25 to 3.74)
3. Mostly B (2.75 to 3.24)
4. Mostly C+ (2.25 to 2.74)
5. Mostly C (1.75 to 2.24)
6. Mostly C- (1.25 to 1.74)
7. Mostly D (lower than 1.24)

21. How many courses have you taken as an undergraduate in each of the following subject areas, including courses you are currently taking? (Circle one number on each line.)

	None	1-2	3-6	7-9	10+
Science	0	1	2	3	4
Math	0	1	2	3	4
Business	0	1	2	3	4
Social Science (e.g., history, economics)	0	1	2	3	4
English/Literature	0	1	2	3	4
Humanities (e.g., art, foreign language)	0	1	2	3	4
Education (e.g., methods, foundations) DO NOT INCLUDE STUDENT TEACHING	0	1	2	3	4

22. Did you borrow money to attend undergraduate school? (Circle one.)

1. Yes ——————> ANSWER QUESTION 23
2. No ——————> SKIP TO QUESTION 24

23. About how much will you (did you) owe after completing your undergraduate education? (Circle one.)

1. Less than $1,000
2. Between $1,000 and $2,499
3. Between $2,500 and $4,999
4. Between $5,000 and $7,499
5. Between $7,500 and $9.999
6. $10,000 or more

24. Did you receive any financial aid that was intended specifically to attract students to teacher education? (Circle one.)

1. Yes ——————> ANSWER QUESTION 25
2. Not sure ——————> ANSWER QUESTION 25
3. No ——————> SKIP TO QUESTION 26

25. Which of the following best describes the financial aid that you received under this special program? (Circle one.)

1. A grant or scholarship that you don't have to pay back if you teach
2. A loan that you don't have to pay back or that is reduced if you teach
3. A loan that you have to pay back
4. Other (specify _____)

26. Did you receive academic honors (e.g., Deans' List, Phi Beta Kappa, Cum Laude, Honor Society) while an undergraduate? (Circle one.)

1. Yes (Specify _____)
2. No

27. While you were in college, did you take any courses or participate in any support services or special programs designed specifically to improve your reading, writing, mathematics or study skills? (Circle one.)

1. Yes
2. Not sure
3. No

28. Did you attend any special classes or programs to help you to prepare to take the NTE? (Circle one.)

1. Yes (Specify _____)
2. No

29. Which of the following best describes your SAT scores? (Circle one number in each column.)

If you did not take the SAT, check this box [ ] and skip to question 30.

	SAT VERBAL	SAT MATH
Less than 300	1	1
Between 300 and 349	2	2
Between 350 and 399	3	3
Between 400 and 449	4	4
Between 450 and 499	5	5
Between 500 and 549	6	6
Between 550 and 599	7	7
Between 600 and 649	8	8
Between 650 and 699	9	9
700 or greater	10	10
Don't remember	00	00

30. Which of the following best describes your ACT Composite score?

If you did not take the ACT, check this box [ ] and skip to question 31.

1. 1 - 10
2. 11 - 20
3. 21 - 25
4. 26 - 30
5. 31 - 35
6. Don't remember

31. Which of the following best describes the location of the high school you attended? (Circle one.)

1. Low income urban
2. Middle or upper income urban
3. Suburban
4. Small town (NOT suburban)
5. Rural

32. Which of the following best describes your high school class rank? (Circle one.)

1. Top quarter
2. Second quarter
3. Third quarter
4. Bottom quarter
5. Don't know or don't remember
6. Not applicable

This section of the questionnaire is about you.

33. How old will you be as of December 31, 1988?

ENTER AGE IN YEARS: ___ ___

34. Are you male or female?

1. Male
2. Female

35. Which of the following best describes you? (Circle one.)

1. American Indian/Alaskan Native
2. Asian/Pacific Islander
3. Black
4. White (Not Hispanic)
5. Hispanic (Mexican-American, Puerto Rican or other Spanish descent)
6. Other

36. Do you communicate better (or as well) in English than in any other language? (Circle one.)

1. Yes
2. No

37. Are you fluent in any other language than English? (Circle one.)

1. Yes
2. No

38. Before you became interested in education/teaching, did you have another career or occupation?

1. Yes ——————> ANSWER QUESTION 39
2. No ——————> SKIP TO QUESTION 40

39. Which of the following best describes your most recent full-time job? (Circle one.)

1. Laborer (e.g., farm worker, laborer, custodian, waiter or waitress)
2. Semi-skilled worker (truck driver, sales clerk, receptionist)
3. Skilled worker (e.g., electrician, plumber, dental assistant, butcher)
4. Clerical or sales worker (e.g., secretary, retail salesperson, supervisor)
5. Managerial worker or self-employed (e.g., small business owner, store manager)
6. Professional (e.g., doctor, lawyer, engineer, business executive, scientist, nurse)

40. Before you recognized your interest in teaching/education as a career, were you involved in any activitie related to teaching (like peer tutoring, or being a camp counselor or religious school teacher)? (Circle one.)

1. Yes (Specify_____)
2. No

41. What is the highest level of education completed by your father or male guardian and your mother or female guardian (Circle one number in each column.)

	Father	Mother
Grade school or less	1	1
Some high school	2	2
High school diploma or equivalent	3	3
Business or trade school	4	4
Some college	5	5
Associate degree	6	6
Bachelor's degree	7	7
Some graduate or professional school	8	8
Graduate or professional degree	9	9

42. Which of the following best describes the occupation of each of your parents? (Circle one number in each column.)

	Father	Mother
Laborer (e.g., farm worker, laborer, custodian, waiter or waitress)	1	1
Semi-skilled worker (truck driver, sales clerk, receptionist)	2	2
Skilled worker (e.g., electrician, plumber, dental assistant, butcher)	3	3
Clerical or sales worker (e.g., secretary, retail salesperson, supervisor)	4	4
Managerial worker or self-employed (e.g., small business owner, store manager)	5	5
Professional (e.g., doctor, lawyer, engineer, teacher, business executive, scientist, nurse)	6	6
Full-time homemaker	7	7
Military service person	8	8

43. Was either of your parents ever in the teaching profession?

1. Yes ——————> ANSWER QUESTION 44
2. No ——————> SKIP TO THE END OF THE QUESTIONNAIRE

44. What position (s) did your parent(s) hold in the teaching profession? (Circle all that apply in each column.)

	Father	Mother
Teacher's aide	A	A
Preschool, elementary, or secondary school teacher	B	B
Preschool, elementary, or secondary school administrator or counselor	C	C
College teacher or administrator	D	D

Please use the following space for any comments you would like to add.

THANK YOU FOR YOUR COOPERATION.

Please return the questionnaire in the envelope provided, or mail to:

NTE Survey
Mail Stop 07-R
Educational Testing Service
Princeton, NJ 08541

Coding of Variables for Regression Analysis

Gender	0 = Male 1 = Female
Mother's or Father's Education	1 = Less than high school diploma 2 = High school diploma/business or trade school 3 = Some college 4 = College graduate 5 = Some graduate or professional education
Mother or Father's Occupation	1 = Full-time homemaker 2 = Laborer 3 = Semi-skilled worker 4 = Skilled worker/clerical/sales/military 5 = Managerial/professional
High School Rank	1 = Bottom quarter 2 = Third quarter 3 = Second quarter 4 = Top quarter
Educational Attainment	1 = Freshman 2 = Sophomore 3 = Junior 4 = Senior 5 = Holds bachelor's degree 6 = Enrolled in graduate school 7 = Holds master's degree 8 = Holds doctoral degree
Undergraduate Major	1 = Education major 2 = Non-education major, education minor 3 = Non-education major, non-education minor
Undergraduate GPA	1 = Mostly D 2 = Mostly C- 3 = Mostly C 4 = Mostly C+ 5 = Mostly B 6 = Mostly B+ 7 = A